Textile World

APRIL 1960

15 TIPS TO MAKE YOU A BETTER MANAGER
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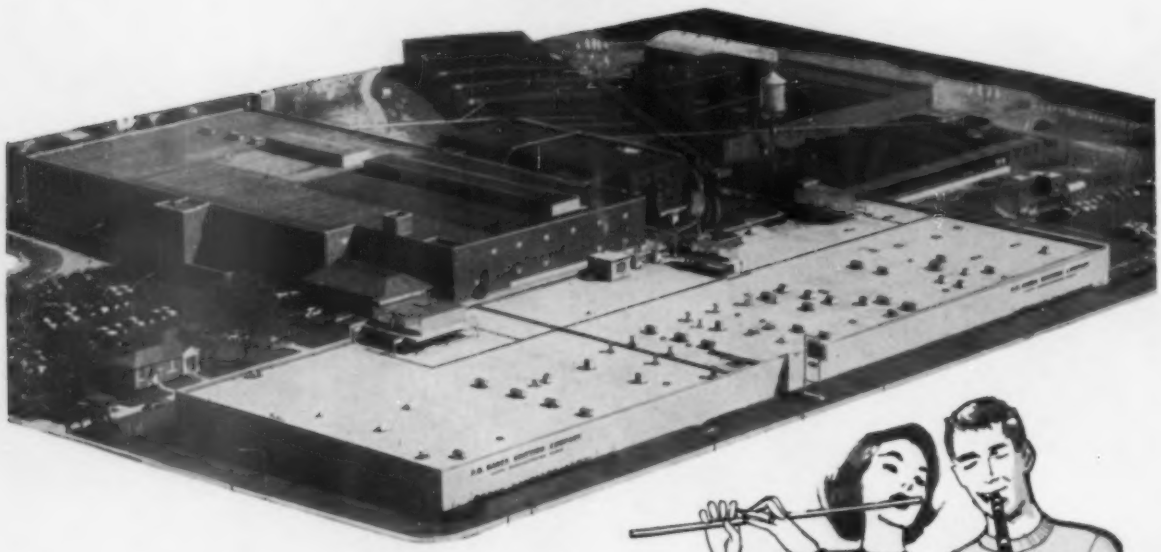
REACTIVITY– A New Concept in Chemical Treatment
page 75

Flash!
"ASA L22, TEXTILES"...
NEW MINIMUM PERFORMANCE REQUIREMENTS FOR WOVEN AND KNITTED FABRICS . . . PAGE 8

NEW WINSTON SALEM PLANT

PRODUCES FABRICS FOR HANES *Knitwear for the family*



When the P. H. Hanes Knitting Company faced the problem of increasing production to meet the growing demand for their "Knitwear for the Family," Robert and Company Associates were called on to make a thorough study of Hanes' present facilities. Finding existing facilities inadequate for additional production, a new plant adjacent to Hanes' yarn mill in Winston-Salem was recommended.

This modern, 126,000 square foot plant, complete with power plant, central station humidification and air conditioned offices is intregrated with the existing yarn mill. The combined operation includes facilities for spinning, winding, yarn storage and conditioning, knitting, cloth storage, bleaching, dyeing, finishing and shipping.

If your plans call for increased productivity and efficiency, draw on Robert and Company Associates' 42 years of experience in serving the great names of the textile industry.

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Textile Engineering Division

ATLANTA

This Month in TEXTILE WORLD April, 1960

Volume 110, No. 4

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Financial Reports Confirm Return of Profit to Mills

The usual March flood of corporation reports has brought out strongly that textile-mill sales and earnings in 1959 were even better than hoped for. A sampling of the results is given below.

Compared with 1958, this collection of companies on the average chalked up for 1959 15% bigger sales and 70% better profits. The gains reflect less a boom than a return to normalcy, for it must be remembered that an excellent year (1959) is being compared with a notoriously poor one (1958).

•

The first quarter of 1960 has closed with results paralleling the successful year just past. Mill managements have money to continue the sharpening up of their plants and equipment. Recent

How Some Companies Fared in 1959

	Sales		Net Earnings	
Dan River Mills				
1958	$161,318,936		$5,330,430	
1959	$173,738,686	+8%	$7,073,330	+33%
Cone Mills				
1958	$165,886,704		$2,957,074	
1959	$190,333,764	+15%	$5,277,874	+79%
Owens-Corning Fiberglas Corp.				
1958	$176,771,484		$11,027,123	
1959	$211,335,854	+20%	$16,170,931	+45%
Celanese Corp. of America				
1958	$223,708,844		$16,685,917	
1959	$265,235,584	+18%	$22,648,307	+36%
Adams-Millis Corp.				
1958	$15,291,744		$380,300	
1959	$18,981,050	+24%	$597,436	+57%
Woodside Mills				
1958	$43,210,000		$1,012,000	
1959	$47,425,000	+10%	$1,855,000	+80%
Mt. Vernon Mills				
1958	$38,318,279		$414,296	
1959	$44,838,691	+17%	$1,115,792	+170%
Munsingwear, Inc.				
1958	$37,725,589		$1,356,221	
1959	$43,794,168	+16%	$1,608,092	+38%
Amerotron Corp.				
1958	$61,600,000		$2,600,000	
1959	$67,346,000	+9%	$5,190,000	+100%

(Continued on next page)

PRESS TIME . . .

GREENWOOD TO ADD $6-MILLION UNIT–

Greenwood Mills will this year add a new $6-million spinning and weaving unit to its mill group. It will be called the ''Sloan Plant'' after a prominent citizen of Ninety-Six, S. C., where it will be built. Construction will be started soon. About 350 will be employed. Plant will be under supervision of A. L. Strawn.

Industrial Rayon Corp.				
1958.....	$47,852,361		$3,057,838	(loss)
1959.....	$62,067,579	+30%	$838,929	(profit)

Reports for Less Than 12-Month Period

J. P. Stevens & Co.				
3 mos. end. 1-31-59	$95,212,735		$2,760,835	
3 mos. end. 1-31-60	$114,765,033	+20%	$4,255,028	
West Point Mfg. Co.				
6 mos. end. 2-28-59	$70,154,000		$2,999,000	
6 mos. end. 2-27-60	$79,826,000	+13.8%	$4,096,000	+36.6%
Indian Head Mills				
3 mos. end. 2-27-59	$10,210,853		$303,715	
3 mos. end. 2-27-60	$13,453,788	+31%	$607,969	+100%

NEWS ABOUT MILLS

Acme Backing Corp., Industrial Products Div., St. Louis, Mo., has moved from the mill there to the general offices in Stamford, Conn.

•

Anglo Fabrics, Inc., has bought Oxford Woolen Mills, Oxford, Mass., from the Benjamin Hass estate. The purchase price was not disclosed.

•

Apponaug Co., Warwick, R. I., has been sold. It has been idle for some time.

•

Avondale Mills, Sylacauga, Ala., has announced a $2-million expansion program for 1960. Thirty looms, each costing $5,000, are planned for the mills at Birmingham. The Pell City mills will receive new spindles and other equipment. New equipment will also be installed at the company's yarn mills at Sycamore, Sylacauga, and Stevenson. The company's mill at Alexander City is receiving about 25% of the total capital expenditures for new equipment.

•

Baxter Corp., Grover, N. C., is moving to a new location in Shelby, N. C. The company is buying a building and five acres of land now being used as a warehouse by J. P. Stevens.

•

Berkshire Hathaway Co., Lincoln, Div., Lincoln, R. I., has been sold.

•

Bigelow-Sanford Carpet Co., Inc., New York, N. Y., and **Vorwerk & Co.,** Wuppertal-Barmen, West Germany have formed a new company, VBS, that will manufacture tufted carpets at a new plant at Gehrden, West Germany. Vorwerk will control 60% of the new company and Bigelow, 40%.

•

Central Yarn & Dyeing Co., Gastonia, N. C., has completed a $250,000 expansion program.

•

Collins & Aikman Corp., New York, N. Y., will build two additions to its plant at Albemarle at a cost of

high-volume production with the same or fewer employees makes clear the rising efficiency of modernized mills.

After dividends, most mills will still have resources to permit further approach to automation. Management will step into the ATMA machinery show at the Atlantic City Auditorium next month with sufficient means to place good orders for any equipmen that meets its fancy.

•

Net working capital has increased over the last 12 to 15 months with many mills, and inventories have generally been reduced. In some cases, the financial reports give figures on projected 1960 expenditures, and these are large. Avondale Mills reports that it has earmarked $2-million to expend in 1960 for modernization of its plant facilities. During the last four-year period, the company has expended $5-million for the same purpose.

It is heartening that larger sales and earnings are also being reported by those to whom the textile industry sells its products—manufacturing clothiers, women's garment makers, mail-order houses, chain stores, retailers, etc. Since the consumers' personal income is up (6% over last 12 months), there is basis for another good year.

In the preface to Whitin Machine Works' annual report, which shows substantial gains in sales and earnings, J. Hugh Bolton comments, "Textile machinery sales had increased greatly by mid-1959, and we now find ourselves with a backlog of orders in excess of any time in recent years. This is brought about by the increased activity in the textile industry itself because mills were beginning to show substantial profits. . . . Everything indicates that 1960 will be a year of very high activity."

Mill Wages Go Higher, Voluntarily and By Negotiation

William Pollock, general president of TWUA, has been active through February and March in spurring wage increases throughout the industry. He has an objective of 10¢ per hour for 23,000

workers in nearly 100 northern woolen and worsted mills by reopening this month the wage agreements as provided in existing contracts. Last increase for these workers was 10¢ just a year ago.

TWUA also seeks 11¢ per hour for 45,000 workers in 200 cotton and rayon mills. Reports say that increases for certain man-made-fiber, carpet, and finishing plants will be effected automatically later in the year through existing contract provisions.

Textile plants in the South are largely following the leadership of several large organizations in voluntarily granting wage increases ranging from 5 to 7% or perhaps 6 to 10¢ per hour. Dan River, among others, has granted a raise averaging 7¢ per hour, thus adding $1,500,000 to its annual payroll. Over in England, 200,000 Lancashire cotton-mill workers last month settled their wage negotiation for a 7½% increase.

Outcry Against Flood of Cotton Goods Imports

Outcry against the flood of foreign textiles entering this country, particularly those from lowest-wage areas, was heard in Washington last month. Senator Thurmond called on Congress to legislate "a reasonable system of mandatory quotas."

He declared that the inadquate protection policies of the Administration left Congress no alternative but to "resume the discharge of its constitutional responsibility in control of imports and tariffs."

In Charlotte, 60 leaders of the combed- and carded-cotton yarn field met to plan procedure to stem the growing threat of foreign yarn imports. The ACMI directors pledged support to Rep. Bailey's (D-W. Va.) resolution that there should be no more cut in tariff rates in the 1960–61 negotiations under GATT. ACMI also endorsed the principle that U. S. should obtain tariff rates or quotas sufficient to compensate for the difference between overseas wage rates and the U. S. legal minimum wage.

•

At the March hearing before the Tariff Commission, Secretary Benson asked imposition of an 8¢-per-lb. fee on imports of manufactured cotton articles and products to prevent such imports from making ineffective the Agriculture Department's export program for domestic cotton. Japanese interests promptly opposed the fee.

New England Congressmen, of both parties, asserted their conviction that the present two-price system for cotton imposes an "unjustified burden" on U. S. domestic textile mills. Rep. Abernathy (D-Miss.) told the TC that each bale of cotton products sent into this country displaces a bale of U. S. cotton which otherwise would be sold here and thus works against the interest of the U. S. farmer. Late in March, Agriculture Dept. ordered a cut in export subsidy rate on cotton to 6¢ per lb. effective Aug. 1.

Robert Stevens, head of J. P. Stevens & Co. and former Secretary for the Army, told the commission that American foreign

more than $8½-million. One of the additions will be used for the production of automotive carpet. The other building will house offices. The company has also announced plans for additional manufacturing facilities at its Ca-Vel plant. The company has also completed negotiations for the acquisition of Bangor Mills, Pen Argyl, Pa.

•

Erwin Mills, Inc., Durham, N. C., is building a 80x240-ft. addition to its Cooleemee, N. C., plant which will separate the finishing plant from other divisions. It will cost around $700,000.

•

Fantasy Yarns, Inc., and Lorraine Yarn Mills, Inc., Philadelphia, Pa., have combined operations. Abe Ulitsky, president of Fantasy Yarns, has been named president of both firms and Arthur LaPierre, president of Lorraine Yarn Mills, has been named chairman of the board.

•

Hamrick Mills, Gaffney, S. C., has bought all the assets, property, and plant of Alma Mills, also in Gaffney. There will be no change in the operation or personnel of the plant.

•

William Heller, Inc., Woonsocket, R. I., has purchased additional equipment for its man-made-fiber and wool-spinning production.

•

Jefferson Mills No. 2, Crawford, Ga., has started to completely air condition its plant. The system is designed to keep the temperature within the plant at 80° F. year around.

•

Jerks Socks, Cincinnati, Ohio, a member of Burlington Industries since March, 1959, has been repurchased from Burlington. Melville J. Dunkelman is president of the new corporation.

•

Mercer Yarn Co., Manayunk, Pa., has bought a building in Manayunk and will use the additional space for storage.

•

Merion Combing Co., Philadelphia, Pa., has leased a building containing 150,000 sq. ft. of space. At present the additional space will be used for storage but will be available for expansion in the future.

Mohasco Industries, Inc., Amsterdam, New York, has started an expansion program that will cost several million dollars at its Oak River Mills, near Bennettsville, S. C.

•

Morganton Hosiery Mills, Morganton, N. C., is adding a new $200,000 wing to its subsidiary, Drexel Knitting Mills. It will also build a boiler plant at the parent company in Morganton.

•

Norlyn Knitting Mills, Glassboro, N. J., is a newly formed corporation. It will manufacture men's, women's, and children's sweaters. It expects to employ about 100 people when full production is reached.

•

Rock Hill Printing & Finishing Co., Rock Hill, S. C., is installing the IBM 1401 system in its plant, that will replace the present electronic system. The new system will handle inventories, billings, accounts receivable, accounts payable, and sales and cost-analysis reports, plus other functions.

•

Sanco Piece Dye Works, Inc., Phillipsburg, N. J., has moved its New York office and showroom to 111 W. 40th St.

•

Shelby Seamless Hosiery Mills, Inc., Shelby, N. C., has been formed. A fireproof building of about 12,000 sq. ft. will be built. Operations are expected to begin by June or July.

•

Shenandoah Knitting Mills, a division of Chadbourn Gotham, Inc., Shenandoah, Va., has closed. Shenandoah is a manufacturer of full-fashioned hosiery.

•

Siler City Mfg. Co., Inc., Siler City, N. C., is expanding its seamless division by building an addition to its present plant.

•

Southbridge Finishing Co., Southbridge, Mass., has announced plans for an expansion program costing more than $2-million.

policy is driving American productive capacity overseas to take advantage of cheap labor, adding "unless the government considers the textile industry expendable, the time for drastic action has come."

W. Ray Bell, president of the ACTM of N. Y., said that importation of cotton apparel had risen from $4,122,416 in 1954 to $71,255,168 in 1959. Of the latter, 45% was from one source—Hong Kong.

A converter told the commission he could not get delivery on a million yards of ginghams from domestic mills in less than six months, with inference that this forced American users to buy abroad. Robert Stevens offered to take care of him in a shorter time, but the buyer wanted the goods only at Japanese prices. Other witnesses said that the proposed 8¢ fee would restrict American cotton exports and thus hurt the American farmer instead of helping him. The Commission set an April date for filing of briefs.

Mill Production Maintained

Production by the textile industry in March was less than 1% below February and par with a year ago. The index (1954 = 100) was estimated at 114, compared with 115 and 114.

Mill sales for the latest month as tabulated on page 10 were $1,226 million, a 2.8% decline from previous month but 11.2% above the same month a year ago.

Inventories at the mill were slightly higher than in the previous month and 4% above a year ago. They remain almost exactly two months sales at the current rate.

Inventories-to-sales ratio rose from 2.00 to 2.08, but were reasonably lower than last year's figure of 2.22.

Man-Made Fibers Make Production Records in 1959

United States production of man-made fibers in 1959 reached a new high level of 1,961,700,000 lbs. according to the *Textile Organon*. This was 21% over the 1,616,200,000 lbs. of 1958 and 11% greater than the previous record out-turn of 1,765,600,000 lbs. in 1957. All categories of fiber production in 1959 showed increases over 1958.

Rayon and acetate volume reached 1,167,800,000 lbs.—a gain of 14% over 1958. Noncellulosic-fiber production reached a new all-time level of 646,500,000 lbs.—32% greater than the 1958 output. The 1959 output of textile glass fiber at 147,400,000 lbs. was also a new record—42% over 1958. Cellulosic fiber imports gained 37% to 115,500,000 lbs. in 1959.

Nylon shipments to the domestic market last year totaled 355,900,000 lbs., while acrylic-modacrylic, staple-tow shipments were 120,800,000 lbs.; all other noncellulosic man-made-fiber shipments amounted to 108,400,000 lbs. Total exports of noncellulosic fibers, at 42,200,000 lbs. were 76% more than in 1958.

Mills Seek Sound Equipment-Replacement Policy

Leading textile corporations and other users of capital equipment participated in an important two-day seminar on Business Investment Policy held at the Algonquin Club, Boston, Mass., March 22 and 23. The seminar was planned and directed by the Machinery & Allied Products Institute with the joint sponsorship of the American Textile Machinery Association and the Northern Textile Association.

W. K. Child, president of ATMA and vice president of Draper Corp., said, "Companies again are turning their sights toward acquisition of the plant and equipment necessary to produce the higher levels of output that will characterize the 1960's. If a company is to have a sound equipment policy, a principal requirement is a reliable technique for determining when equipment is economically replaceable."

The Conference offered a three-fold program aimed at replacement of existing assets to realize the economic potential gained through modern equipment with its higher productivity and cost-saving factors. It was estimated by industry spokesmen that existing equipment in the textile mills of the United States is between 60 and 70% obsolete according to 1960 standards.

The Nylon-Rayon Tire-Cord Battle

The "Value Line Investment Survey" states that rayon and nylon producers are locked in a spectacular struggle for some $350-million worth of tire cord which will be purchased by the rubber industry this year. They are using, the survey says, the most deadly weapon on the business scene: price cutting.

Quoting the survey further: "Last year nylon, the challenger, boosted its share to almost 40% of the total tire-cord market. It has taken nearly half of the replacement market for passenger-car tires and achieved a commanding lead in heavy-duty (aircraft, truck, and tractor) tires. This year if nylon can penetrate the original-equipment auto-tire field, its ascendency will be established."

The survey sees other competing materials on the horizon and says, "Even if nylon displaces rayon, can it count on an indefinite rule?"

J. P. Stevens & Co., Whitmire, S. C., will install 50 Roberts Arrow M-1 spinning frames. The new equipment installation will total 16,000 spindles.

•

Strutwear, Inc., Clarksdale, Miss., has been sold to Apparel Industries, Inc., a wholly owned subsidiary of Kayser-Roth Corp., New York, N. Y. The Clarksdale plant will continue operations and will probably be enlarged by the new owners. W. L. Holcomb, president of Strutwear, will serve Apparel Industries in an advisory capacity.

•

Velvet Textile Corp., Blackstone, Va., has taken over the Rochelle Park Velvet Dyeing & Finishing Co., Lodi, N. J.

•

Washington Mills Co., Winston-Salem, N. C., will build a 40,000-sq.-ft. plant at Marion, N. C., for the manufacture of knit products. The first unit will cost $800,000; the second unit, $2-million. Production is scheduled to start in late September.

•

West Point Mfg. Co., West Point, Ga., has completed plans for the installation of a new $2½-million operation in connection with its Shawmut (Ala.) Mill Div. The new operation will manufacture fine combed-yarn fabrics. Installation includes 450 looms and 20,000 spindles. Production is scheduled to start about Nov. 1. The company has also announced that it has bought the former East Newnan Mills' land and property in Newnan, Ga.

•

Wis-Knit-Wear Co., Inc., Marinette, Wisc., is a newly formed company that has leased the facilities of Marinette Mills in Marinette. Harmon Juster, former general manager and vice president of Westwood Knitting Mills, Los Angeles, Calif., is head of the new firm.

•

Wytheville Knitting Mills, Inc., Wytheville, Va., has changed its name to Wytheville Corp.

•

Correction:

The Pellon Corp.'s expansion of facilities is at its Lowell, Mass. plant —not at its New Bedford, Mass., plant as reported in this column in the February 1960 issue.

Minimum Fabric Performance Specified in New ASA Standard

American Standards Association specifies minimum performance requirements for finished woven and knitted men's-wear, women's-wear, and home-furnishings fabrics, regardless of fiber content, in 75 end uses. "ASA L22, Textiles" will be released this month.

Intended to counteract the "buyer beware" philosophy, the new standard may benefit the textile manufacturer, as well as the distributor and ultimate consumer, by discouraging inferior imitations of high-quality fabrics.

The far-reaching new standard is sponsored by the National Retail Merchants Association. It will be known simply as "ASA L22, Textiles." An earlier ASA standard—established in 1952—also bore the designation L22; but that covered only rayon and acetate fabrics. The expansion of the earlier standard is on a scale that dwarfs the original. A committee of 43, representing 35 organizations, worked on the development of the new standard.

Ideas Grew Over 15 Years

At the annual meeting of the American Standards Association in December, the Association's managing director, Admiral George F. Hussey, Jr., gave credit for conception of the standard, in both its old and new versions, and for nursing it through to maturity, to George G. Sommaripa, of the Association's Consumer Goods Division. He is a Harvard Business School graduate and seasoned by many years in association, governmental, and standards work. Mr. Sommaripa has explained that the idea of a broad-gauged standard, to be established by the leading standardizing body of the United States, came to him as a result of his study of the "Crown-Tested Plan" operated by American Viscose Corp. previous to 1945.

The work of the committee was not always smooth. Retailers constantly raised the point that styles, fashions, shapes, and forms are, as Mr. Sommaripa quotes them, "the spice, the job, and the inspiration of the industry" and that fabric performance is a secondary consideration that should not encroach. The principle was finally established, however, that originality and artistry would still have wide scope even if fabrics were required to perform satisfactorily in service, and that taking steps to see that fabrics possessed and maintained suitable characteristics of hand, appearance, and durability would be beneficial alike to consumers, distributors, and textile manufacturers. Countless individuals in those three groups have felt that some commonly accepted basis of comparison by which the performance of a fabric could be judged has been long overdue.

Most standardization work with respect to fabrics in the past has been confined to methods of test. Much good work in test methods has been accomplished by such organizations as the American Association of Textile Chemists & Colorists and the American Society for Testing Materials. This ground work proved most valuable to the L22 committee, which found it necessary in most cases merely to specify a method of test already established and accepted.

Committee from 35 Interested Groups

The L22 Committee comprised 43 voting members and 8 observer or liaison members. The chairman was Lester O. Naylor, of Montgomery Ward & Co.; the vice chairmen, Walter Ross, of Rosewood Fabrics, Inc. and Jackson E. Spears, of Burlington Industries; and the secretary, Mr. Sommaripa. The following 35 organizations were represented on the committee:

American Association of Textile Chemists & Colorists, American Association of University Women, American Council of Independent Laboratories, American Federation of Labor & Congress of Industrial Organizations, American Home Economics Association, American Home Laundry Manufacturers' Association (observer), American Hospital Association, American Hotel Association, American Institute of Laundering, American Retail Federation, American Society for Testing Materials, Association of Buying Offices, Consumers' Research, Consumers Union of U. S., Cooperative League of the U. S. A., Corset & Brassiere Association of America, U. S. Department of Commerce (liaison), U. S. Department of Labor, Department of the Navy, U. S. Marine Corps, Federal Trade Commission (liaison), General Services Administration Federal Supply Service (liaison), Mail Order Association of America, National Association of Educational Buyers, National Association of Retail Clothiers & Furnishers, National Association of Shirt, Pajama & Sportswear Manufacturers, National Institute of Drycleaning, National Retail Merchants Association, New York Raincoat Manufacturers Association, Silk & Rayon Printers & Dyers Association of America, Synthetic Yarn Producers (company representation), Textile Distributors Institute, Textile Fabrics Association (observer), Upholstery & Decorative Fabrics Association of America, Variety Stores Association, and Warp Knit Fabric Manufacturers Group of the American Cotton Manufacturers Institute.

Mr. Sommaripa, not basically a technologist, gives complete credit for the staggering burden of detailed technical development of the standard to Cameron A. Baker and the technical committee that he chairmanned. Mr. Baker, until recently director of textile research at United States Testing Co., is now director of research and development at Better Fabrics Testing Bureau.

What a Standard Prescribes

One example, among the 75 end uses covered by minimum performance standards, is that for "Women's and Girls' Blouse or Dress Woven Fabrics." This standard is broken down into five areas, distinguished principally by response to washing and drycleaning. Most of the other properties are constant for the five divisions. The properties for which minimums are given are: Breaking Strength (dry and wet), Resistance to Yarn Slippage, Tongue Tear Strength, Yarn Shifting (for satins and for all others separately), Maximum Dimensional Change—Each Direction, Color Fastness to Atmospheric Fading (after washing and after drycleaning), Color Fastness to Laundering (alteration in shade and staining), Color Fastness to

Drycleaning, Color Fastness to Crocking (dry and wet), Color Fastness to Perspiration (alteration in shade and staining), and Response to Light Exposure. Abrasion and Pilling are listed as properties, but limitations are omitted until correlation between laboratory tests and end-use wear experience is more satisfactory. Adjacent to each property is listed the standard test-method to be applied. In great majority these are AATCC and ASTM tests. An extension of the number L22, by numerals or letters, will indicate the end-use category, the specific fabric group, and its basic response to refurbishing treatments.

Another section of the standard deals with the performance requirements for special finishes, such as those giving staining resistance, wrinkle or crease resistance, crease or pleat retention, moth resistance, mildew and rot resistance, antistatic properties, and colorfastness to sublimation. An extension of the same section specifies tests for determining the deleterious effects of finishes, such as brittleness, odor, and chlorine retention—the latter causing loss of strength. A further extension specifies the performances of textiles that are to be decribed as "wash-and-wear" fabrics or "minimum-care" fabrics.

An additional section of the standard discusses permanent labels, detachable tags, and certification of fabrics or products. Here it is stated that, when merchandise meets all provisions of the appropriate end-use requirements and no special-care instructions are required for adequate consumer protection, a simple reference to the American Standard L22 with a letter for appropriate care may be used with labeler's name, trademark, or other identification. The labeler may also add such special-finish information as "Wrinkle or Crease Resistance" and also special instructions for care, such as "Washable—Do Not Dryclean." If he claims only partial compliance, he must list the properties that do not comply, as "ASA L22-W Except Shrinkage."

The standard recommends that labels be color-coded for care instructions by means of a color strip running the full width or length of the label and not less than ⅛ in. wide. Purple should indicate "160° washable with bleach"; green, "160° washable, no bleach"; blue, "120° washable, no bleach"; yellow, "105° washable, no bleach"; and red, "drycleanable only."

The labeler may make any other representation of goods not in conflict with L22.

The claim that the product meets L22 requirements and other representations are to be made on the labeler's responsibility. No special certifying agency has been established, although testing laboratories will be permitted to provide certification based on test results that meet L22 requirements. Establishments wishing to avail themselves of the certification mark "ASA" may apply for information to the American Standards Association. The standard also contains a glossary of terms.

Who Uses and Who Benefits?

By whom and how will L22 be used? In theory, at least, it will be used by either buyer or seller. The buyer may specify that the fabric must meet the L22 standard for the particular end use to which it is to be applied. On the other hand, the seller may volunteer the information that his fabric meets the L22 standard. It should serve to simplify the buying and selling of fabrics. Perhaps it will permit more time and attention to be given to "the spice, the joy, and the inspiration" that lie in creation, originality, style, and fashion. Basically, of course, it will tend to counteract the "buyer beware" philosophy.

Will the ultimate consumer—such as the housewife—grow to understand and use L22? That depends, probably, on how extensively textile manufacturers and retailers decide to discuss L22 in their advertising to the consumer and how well the retailers educate their salespeople. Manufacturers, finishers, converters, cutters, and retailers may all find it desirable to label their products with the L22 designation. Retailers may want to have their salespeople provided with copies of the L22 standards that apply to the goods they sell, in order that they may answer specific questions from customers about fastness to light, perspiration, or laundering, or about shrinkage, seam slippage, strength, and other matters important to the particular end use. Many a shopper will be happily surprised to find salespeople capable of answering such questions accurately.

Already there are textile men who, through familiarity with the earlier L22 or informed in advance about the coming enlargement, have developed enthusiasm for the new standard. They would like to see some agency established to supervise its application.

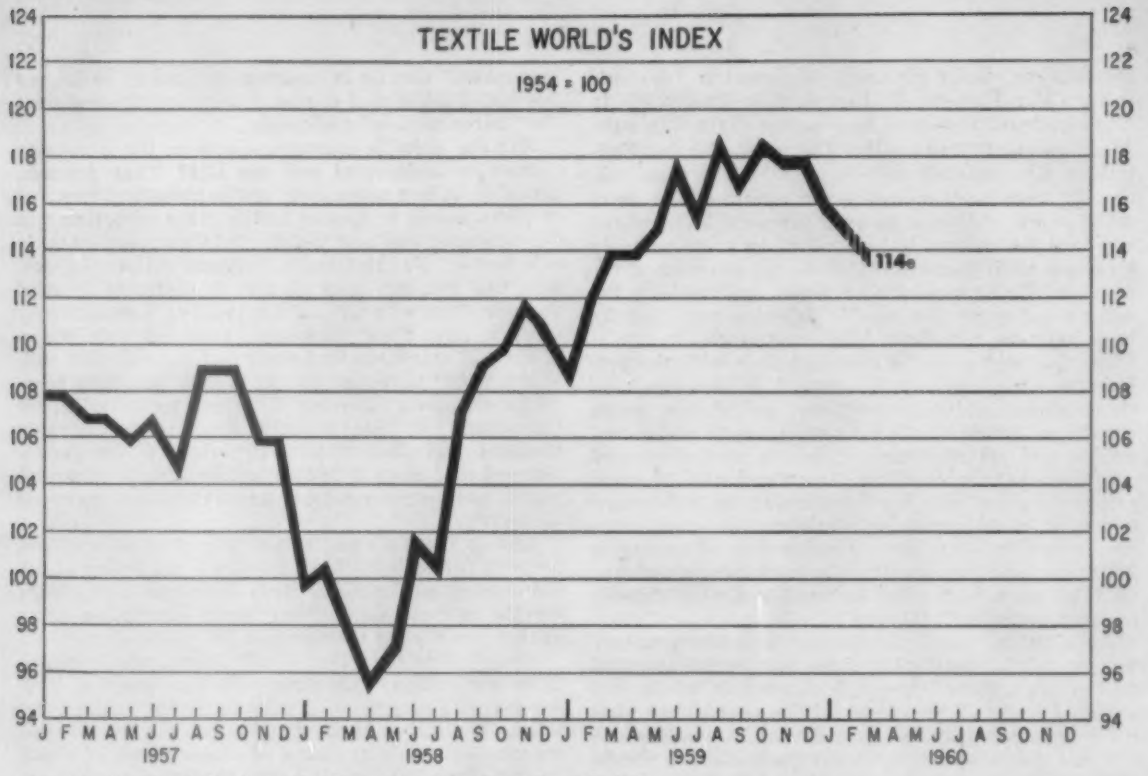
What will be the effect of L22 on the textile-manufacturing industry? In answering this question, it is necessary to assume that manufacturers, cutters, retailers, and others in the distribution line will not put the standard aside as just a worthless bunch of paper (such a disposition could be its fate, of course). If they will use the standard in buying and selling in good faith and will educate the consumer to use it too, the effect on the textile industry proper could be profoundly beneficial. This is because L22 should mitigate against one of the ills of the industry about which textile men themselves do the most complaining—namely, the tendency of unscrupulous producers to imitate successful fabrics of high quality with inferior merchandise that undersells and ruins the reputation of the originals. In other words, L22 could help a manufacturer to capitalize on quality of product.

Of course, there will still be differences in the performance characteristics of various fabrics. There will continue to be high-quality fabrics that can be imitated with cheaper fabrics that also conform to L22 minimum standards. It will still be necessary to merchandise very superior fabrics hard and fast and thus capitalize on them before the imitators catch up. Competition will not be abolished. But at least there will be a floor under which deterioration cannot be successfully carried.

Will L22 handicap the industry to some degree by creating more grounds for litigation? It will probably be the backbone for litigation, but it may insure fairer, easier, and quicker judgments. As in the application of other standards, no one sample of a product will decide a case. Several samples are commonly tested, and a reasonable tolerance is allowed, in recognition of the fact that 100% perfection is not uniformly possible. By clarifying to buyer and seller alike what the performance of a fabric should be, L22 may even reduce the instances of litigation.

Copies Available from ASA

ASA L22, Textiles was approved by ASA in February and will probably be issued this month. Copies will be available from American Standards Association, Inc., 10 East 40th St., New York 16, N. Y., at $5.50.



Index of manhours worked in the textile industry adjusted for changes in productivity.

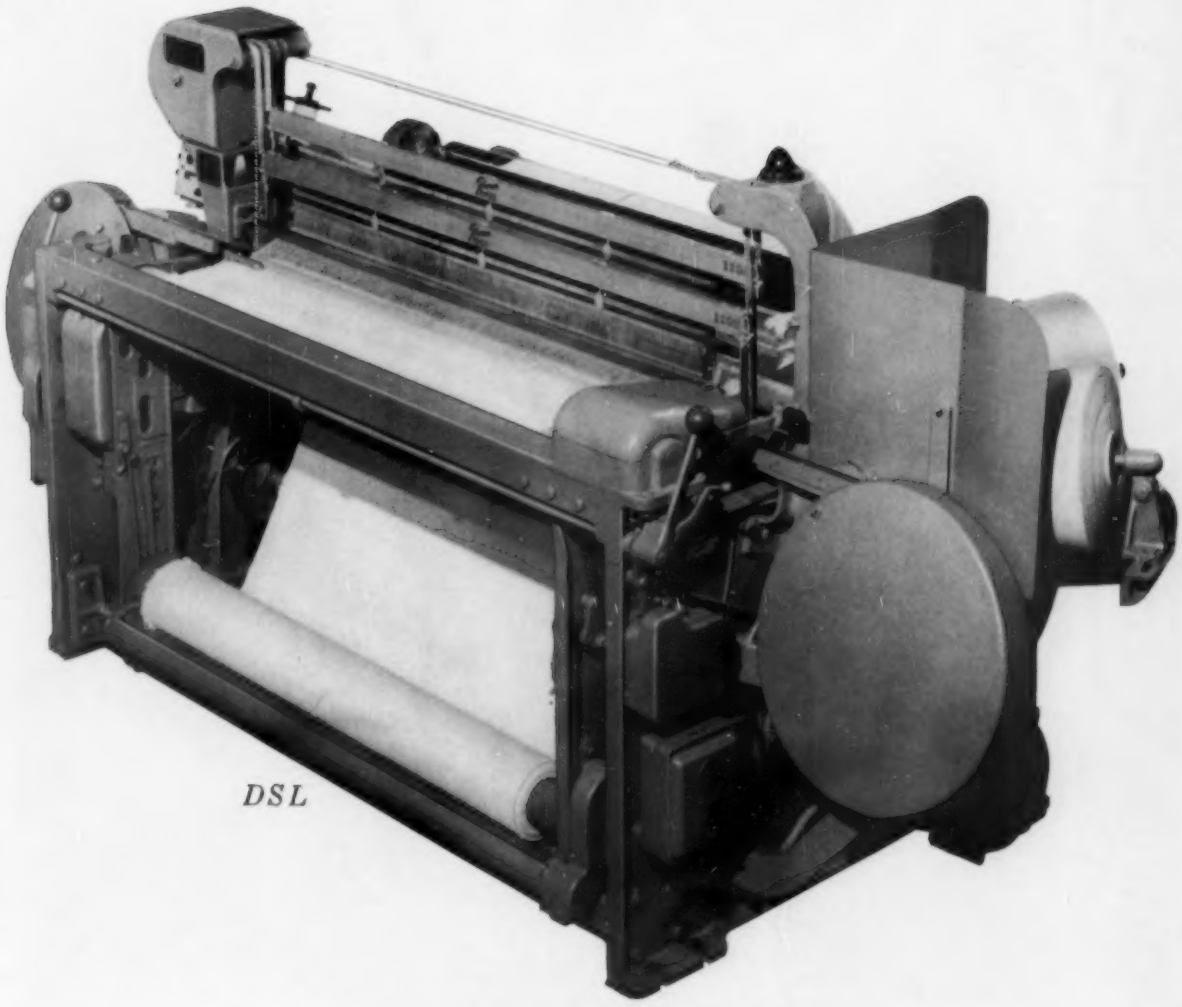
Textile World's Monthly Indicators

	Latest Month	Previous Month	Year Ago
Textile World's Index (1954=100)	**115**	**116**	**114**
Employment (thousands) B.L.S.	950.9	951.5	960.3
Production Workers (thousands) B.L.S.	857.9	858.0	867.4
Weekly Earnings B.L.S.	64.6	64.5	61.7
Hourly Earnings B.L.S.	1.60	1.60	1.53
Weekly Hours Worked B.L.S.	40.1	40.3	40.3
Production Index (1957=100) F.R.B.	115	117	109
Wholesale Price Index (1947-49=100) B.L.S.	96.5	96.6	93.7
Manufacturers' Sales (million $) Commerce	*1,226	1,261	1,102
Manufacturers' Inventories (million $) Commerce	*2,554	2,530	2,449
Inventories-to-Sales Ratio	*2.08	2.00	2.22
Exports (million $) Commerce	*193.8	156.7	75.6
Imports (million $) Commerce	*108.5	104.6	88.4
Stock Price Index (1941-43=10) Standard & Poor's	29.87	31.04	26.07
Failures (number) Dun & Bradstreet	7	6	5

National Economic Indicators

	Latest Month	Previous Month	Year Ago
Industrial Production (1957=100) F.R.B.	110	111	102
Consumer Price Index (1947-49=100) B.L.S.	125.3	125.4	123.7
Wholesale Price Index (1947-49=100) B.L.S.	119.4	119.3	119.5
Population (millions) Census	177.0	176.7	173.4
Unemployment (millions) Census	3.9	4.1	4.7
Employment (millions) Census	64.5	64.0	62.7
Personal Income (billion $) Commerce	393.0	392.8	371.0

* Estimate for January. Other figures for February.



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Each roll has two widely spaced ball bearings

Ball bearings are lint sealed and shielded

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Same weighting spindle to spindle

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A 160,000 spindle mill thoroughly tested virtually all modern drafting systems for a six month period with positive results. Roberts Double Apron Drafting with **PosiWate** Top Roll Suspension produced yarn with the fewest ends down, best breaking strength and evenness. Besides, it was the best liked by the spinners themselves.

Roberts Double Apron Drafting is making quality yarn on more than 3½-million spindles. **PosiWate** Top Roll Suspension has been installed on more than 200,000 spindles in the past year and is being installed as a changeover for more than 30 frames every week.

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water

comes in oceans, rivers, lakes, wells,
drops, buckets, pitchers and glasses.
it quenches thirsts, cooks food, puts
out fires, makes coffee and
brushes teeth. it spins mills,
runs electro-plants, cools motors
and power factories.
it spawns fish, sprinkles lawns,
floats boats, washes children
and grows flowers.

it sustains and nurtures.
it bends if you give it purpose.
it reshapes itself if you give it reason.
it is needed, wanted, feared,
praised and prayed for.

it is at the heart of all life.
it is in the arteries of all industry.
it is as close to us as skin
but as taken for granted as sky.

the end of water seems unbelievable.
if it is not on the horizon, it is just over it.
if it is not within sight,
it is just 'round the bend.
if it is not in the glass,
it is just in the spigot.

. . . this is the grand mirage . . .
the self-delusion that prevails
though the wells run low
and the streams go dry
and the water slips away.

we know water.
we know its ways.
we've learned its habits.
we've pulled it out of swamplands,
pushed it over mountains,
pumped it into deserts,
tunneled it through granite,
and rescued it from pollution.

above all else,
we know the need for it.
that is why,
for 130 years,
we've developed new uses for,
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diverted the courses of
and jealously stood guard over
water.

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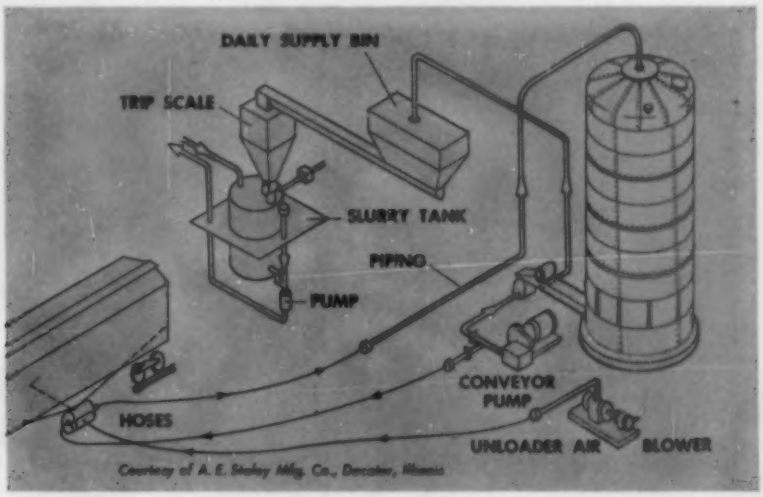
Here's a "TRIPLE-THREAT" cost-saving system for handling bulk starches



A typical low air-volume pneumatic system for handling bulk starch with *Permaglas* Mechanized Storage Units. Shipped in hopper cars, starch is unloaded by air-activated gravity conveyors, and delivered by air to storage bin, and then to a daily supply bin through a hose and piping connected to the conveyor blower. Screw conveyor carries starch from daily supply bin to automatic scales which supply a continuous slurry make-up tank.

Permaglas® *Storage Structures ...mechanical "sweep-arm" bottom unloader ...pneumatic or mechanical conveying systems*

Permaglas Mechanized Storage Structures offer a "dynamic challenge" to the higher cost, conventional methods used in handling and storing bulk starches—granular, grit, pearl, and powdered—the basic raw materials in paper, textiles, food processing, baking, confections and pharmaceutics. You can realize lower costs in your starch processing operations when *slow and expensive* methods are replaced with *Permaglas* Mechanized Storage Units, equipped with the *exclusive* "sweep-arm" bottom unloader, and an efficient pneumatic or mechanical conveying system.

The major advantages of an automatic bulk handling system are:

- Bulk starch costs less than starch in paper or cloth bags.
- Labor costs are less. Save as much as 40 man-hours to unload a car of starch.
- Save warehouse space used for storage of bagged starch.
- Eliminate hidden dollar losses due to breakage, spillage, and residue left in bags.
- Prevent hazardous accidents with safer and cleaner plants.

What's more, you get this *exclusive* A. O. Smith feature. *Permaglas* Storage Structures are glass-fused-to-steel construction* both inside and out. They make possible sanitary, easy-to-clean, bulk starch handling systems. Eliminate corrosion. Safeguard starch from contamination. Reduce periodic structure maintenance to a minimum.

This low-cost automatic way to handle and store starches can be accomplished with minimum of capital investment. Certainly, it is worth further investigation. Mail coupon for details.

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You can be sure of full motor life by specifying on your equipment and replacement motor purchase order, "these motors to include KLIXON Protectors."

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KLIXON-Protected Motors are now available from your motor supplier. Specify and use motors with KLIXON Inherent Overheat Protectors. The savings obtained more than offset the slight additional cost.

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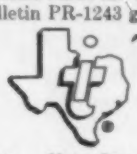

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You and Your Boss

Perhaps the one single factor in our work that has the greatest critical effect on our enjoyment of the job and our over-all productiveness on the job is our relationship with our boss.

By S. G. WILLIAMS, Management Consultant

"BOY-O-BOY! This job would sure be a whole lot easier if I knew what he wanted! I just can't figure him out. Do you have that trouble with *your* boss, Joe?"

"Everybody does, if you ask me, Frank."

Almost everybody does, but not quite. Once in a while you find a supervisor who has been trying to apply what might be loosely called "science" to the important business of understanding and, consequently, getting the most out of the man he supervises.

It's an Important Basic

You most likely know people who have left work they liked because of a boss they didn't like, and you've probably known others who have stayed on, doing a job that was unpleasant, because they had such a positive feeling for the man in charge.

If we agree that a poor superior-subordinate relationship can make a good job intolerable and that a pleasant superior-subordinate relationship can make even an undesirable job challenging and acceptable, then that leads to one more hurdle we have to get over before we can settle down to the business of what to *do* about you and your boss.

Where the Responsibility Lies

It is human to feel the boss is at fault when we don't get along with him as well as we wish we did. But if we will be very logical, instead of merely human, we will realize that both of us must share any blame for the condition.

Let us say, just for the sake of argument, that the Laws of Justice prevail, and that each of us—our superiors and we—shares the blame equally, as half responsible. Let us say, also that we are helpless to create any change in our superior's behavior. We *still* are in a position to make a 50% improvement in the situation. And if we stop and consider, 50% is a whale of a lot of betterment.

Experience suggests that, if we go this far toward improving the relationship, the boss won't be able to escape being affected by it. He'll almost inevitably move toward correction, too. So we end up with our 50% plus whatever the boss contributes toward a brighter, happier, more satisfying (and, without doubt, more productive) working relationship.

Worth while? It certainly is! So what can we do to get started?

Revise Your Arithmetic

You have been taught that $1 + 1 = 2$. However, the real secret of boss handling lies in realizing that you plus your boss equal one: a functional *unit* in the business of getting the work done. His job and your job mesh to form a single part of the total job that the company undertakes to accomplish.

If you will try this viewpoint on for size, you'll discover that he can't get that single job done without you, that you can't get it done without him. Then you'll be ready to examine the Unit as a whole.

What Will You Find?

When you think of the boss and you as an entity, an "economic organism," you find the entity has certain strengths. Some of those strengths are yours, some are his. You find the organism has certain weaknesses—again, some of them yours, some your superior's.

Looking a little harder, you discover that some of his strengths compensate for some of your weaknesses and that some of your strengths compensate for some of his weaknesses. For instance, you may have a tendency to rush into things headlong. The chances are that he puts a bridle on your plunges, slows you down—and keeps you from diving into hot water oftener than not. On

the other hand, the boss might be uncomfortable with figures, while you're a whiz with the numbers. So you make it a practice to give him accurate, carefully checked reports that he knows he doesn't have to try to check for errors.

The result: *balance!*

This concept may be familiar to you as "Shepherd's law of the management unit." It was developed by William Shepherd at the American Management Association and it is based on the fact that no one is a manager without someone to manage, that "management" necessarily involves a relationship between two people, and that, consequently, you can not study or consider "managing" without looking at those two people at one and the same time. What is true of management in this respect is just as true of supervision.

Increase the Balance

The more of this type of balance you can develop, the better your relationship with your superior will be. There are three proven ways to do exactly this:

. . . Identify the areas where you provide the compensating strength. If the boss didn't have some limitations, he could probably do your job along with his own; he wouldn't need you. (If he were perfect, he'd also be an impossibly inhuman fellow to work for!)

List his pros and cons. List your pros and cons. See where you have a "pro" to fill the gap of one of his "cons." Then pour it on. This is prime opportunity to make the relationship vastly better.

"Nothing makes Mr. Graves, my boss, unhappier," a night-shift foreman told us recently, "than to come in in the morning and find a grievance waiting for him to settle. So I work like a son-of-a-gun to settle them all right here. Once in a while I have to spend several hours getting a sticky one straightened out, but do you know what? I haven't sent a grievance along to Mr. Graves for over eighteen months. And the Union's just as happy about it as I am!"

. . . Identify the areas where he provides the compensating strength. Use the same lists of pros and cons. When you see it down there in black and white, your native intelligence will undoubtedly propel you to do several things: (1) appreciate the fact that he covers you on points where your talents are shy, (2) ask his advice more often in these areas and (3) try to imitate and learn from him with respect to these particular matters.

Orson Edwards, superintendent of a South Carolina mill, made himself the lists as described, reached this point in the procedure, and had the following revelations to report:

"I discovered my boss has a whole mass of abilities I never gave him credit for. And I am *using* those strong features of his every day. Last Monday I kept track of all the times I turned to him for something. Damned if I didn't have seven different occasions. Then I tried to figure just why I'd gone to him in each instance. *Every time* it was because he had something I didn't have, or could do something I couldn't do. It's funny—I guess when you think about it it isn't really funny at all—but just the same, I was amazed, and I have a new respect for the old boss-o."

. . . Identify the areas where you and your boss are both weak. This is the *big* opportunity, the place where you can do the *most* good toward increasing the balance and improving the relationship. Work on building your ability in these areas. Practice. Take a course, if one is available.

You and your superior are both poor communicators? Then concentrate on your communication skills. Take pains to see that your subordinates and colleagues are kept informed. Spend a little extra effort to *get* the information your boss fails to give you. (You know ways to do it, if you want to go to the trouble!)

What's almost sure to happen? As you do better in communicating, the whole matter of communications, the "communications environment," improves. Your boss, like everyone else, is subject to the influence of the environment. Before long, his communications are mighty likely to get better, too.

He and you are both kind of ragged on your planning? If you put your mind to it, get some really first-class plans down on paper, and began working toward the fulfillment of those plans, how long do you think it would be before your boss would begin adjusting to your improved planning by coming up with some concrete objectives of his own?

The happy part of all this is that you can't possibly lose. Supposing you don't have any effect on your superior, you've still leaped ahead in terms of creating a more satisfying working situation for yourself. And every benefit to you is a benefit to the Unit, the Unit made up of your boss and you. And every benefit to the Unit will make your job more pleasant, more satisfying, and more productive.

Humanics — *A TW Brief*

These Four Factors Influence Job Satisfaction

Pay alone will not buy good, loyal workers. There are four things that must be granted in addition to good pay to keep the average worker satisfied. These factors are:

1. Self-respect. The supervisor must respect and uphold the dignity of the individual.

2. Freedom of action. While rules and regulations are necessary, a certain amount of individual self-expression must be permitted.

3. Self-improvement. The worker must have the opportunity to advance on the job, to have something to work toward.

4. Recognition. Accomplishments must be recognized and rewarded.

The supervisor who uses these four factors as a basis for employer-employee relations will find his job much easier. The worker who is satisfied with his job is better in every way than the dissatisfied one.

You get additional operating profits with Built-in Economy Features

of BAHNSON COLLECTO-VAC

You can plan for additional operating profits with the extra quality design features of Bahnson's Collecto-Vac for collecting broken ends, lint and fly. Its anodized aluminum flutes neither crack nor warp, thus eliminating replacement costs . . . its rugged all-steel collection box provides durable service indefinitely . . . its scroll type fan gives maximum air handling, helps air distribution in the room by dispersing motor alley heat . . . it has quick, easy access for maintenance.

Collecto-Vac's superior construction enables it to reduce ends down more efficiently, to minimize slubs and gouts, to keep frames and room cleaner. Ask any mill man who has Bahnson Collecto-Vac. Fill in the coupon below for free informative bulletin.

Clip coupon to letterhead. Mail today for Free Illustrated Bulletin 30A.

Name_____

Bahnson

AIR-O-MATION

THE BAHNSON COMPANY • WINSTON-SALEM, N. C.

UNISORB

HELPS PRESERVE ACCURACY OF NEW SHUTTLESS LOOMS

New Shuttless Looms now being made available to the textile industry promise important improvements in production efficiency.

Unisorb engineered mounting pad — Type "H" — used under textile machines for over 25 years, is the ideal mount for this new type of loom.

Unisorb Type "H" has a specially engineered "resilient density" for precision machine mounting. It has a loading range of 5 to 50 psi and will maintain precise level over an extended period of time.

Unisorb mounting will also provide a number of other very important advantages . . .

- Unisorb will reduce transmitted vibration and noise up to 85%.
- Unisorb holds the machine in place without lag bolts or screws, does not require hole drilling or tricky spotting.
- Looms can be run at high speeds. Vibration control and precise leveling reduce wear and tear on moving parts.
- Looms can be easily moved to new and more efficient production setups at any time.
- Unisorb saves up to 80% in actual mounting costs, over conventional, old fashioned methods.

GO MODERN — GO UNISORB!

Unisorb machine mounts keep textile machines operating at top efficiency. In addition to Unisorb Type "H" there is a wide variety of densities and thicknesses for mounting every type of textile machine and preparatory equipment. Ask about Unisorb at your local Unisorb distributor or write direct.

Distributed by INDUSTRIAL SUPPLY CO., CLINTON, S.C. • TEXTILE SUPPLY CO., DALLAS, TEXAS

UNISORB

UNISORB 213 SOUTH STREET, BOSTON 11, MASSACHUSETTS

Division of The FELTERS Company

Sales Offices in New York, N.Y. • Chicago, Ill. • Detroit, Mich. • Upper Darby, Penna. • St. Louis, Mo. Taylor Felt & Supply Co., San Francisco, Calif. • Acorn Mfg. Co., Los Angeles, Calif.

Please send me a Unisorb Sample and Free Book.

Name.....

Company.....

Address.....

City.....Zone.....State.....

FEB-TO

CALENDAR

April

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., April 6

American Cotton Manufacturers Institute, annual meeting, Americana Hotel, Bal Harbour, Miami Beach, Fla., April 7 to 9

Alabama Textile Manufacturers Association, annual meeting, Buena Vista Hotel, Biloxi, Miss., April 20 to 22

National Association of Hosiery Manufacturers, annual meeting, Americana Hotel, Miami Beach, Fla., April 21 to 24

Institute of Textile Technology, meeting of the Technical Advisory Committee and Board of Trustees, Charlottesville, Va., April 26 & 27

Phi Psi, annual convention, Hotel Roosevelt, New York, N. Y., April 28 to 30

Underwear Institute, annual meeting, Hotel Biltmore, New York, N. Y., April 29

May

Textile Industry Subcommittee, American Institute of Electrical Engineers, annual conference on Electrical Application in the Textile Industry, Heart of Atlanta Motel, Atlanta, Ga., May 5 & 6

Georgia Textile Manufacturers Association, anniversary meeting, Diplomat Hotel and Country Club, Hollywood, Fla., May 19 to 21

American Textile Machinery Exhibition, Atlantic City Auditorium, Atlantic City, N. J., May 23 to 27

Narrow Fabrics Institute, Inc., spring meeting, Atlantic City Country Club, Northfield, N. J., May 25 to 27

Tufted Textile Manufacturers Association, annual convention, Fountainebleau Hotel, Miami Beach, Fla., May 25 to 28

South Carolina Textile Manufacturers Association, annual meeting, The Cloister, Sea Island, Ga., May 26 to 28

11th Annual Cotton Research Clinic, Grove Park Inn, Asheville, N. C., May 31 to June 2

June

Southern Textile Association, annual convention, Grove Park Inn, Asheville, N. C., June 23 to 25

ASTM, annual meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., June 26 to July 1

September

Combed Yarn Spinners Association, annual meeting, The Cloister, Sea Island, Ga., Sept. 8 & 9

October

21st Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 3 to 7

Photo courtesy The Graniteville Company, Graniteville, S. C.

It gives gloves better "hand"

Looks like suede—feels like suede—but the work glove above is actually made of cotton. What gives this glove its unique suede-like appearance and better "hand"? Answer: it was knife-coated with a compound based on PLIOVIC AO, Goodyear vinyl chloride copolymer dispersion resin.

In addition to its distinctive texture, this new material will wear three to four times longer than uncoated fabrics and has exceptional "gripping power." Called Duro-Suede, it is now being produced for work gloves —may soon be used in work shirts and jackets, sports clothing and various industrial applications.

PLIOVIC AO was chosen for its low fusing temperature, excellent plasticizer compatibility, good viscosity characteristics and film texture. All of these properties contribute to ease of processing, efficient operation and outstanding product quality.

Want to add sales-building new properties to your product? PLIOVIC AO may help you do it. Write for complete information—including latest *Tech Book Bulletins*—to: Goodyear, Chemical Division, Dept. P-9433, Akron 16, Ohio.

GOODYEAR

CHEMICAL DIVISION

Pliovic—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

Match your operating needs with Expert Custom Design

Bahnson provides experienced planning which cuts waste, gives you flexibility for the future, takes into account operating expense, and helps you insure the quality of your product.

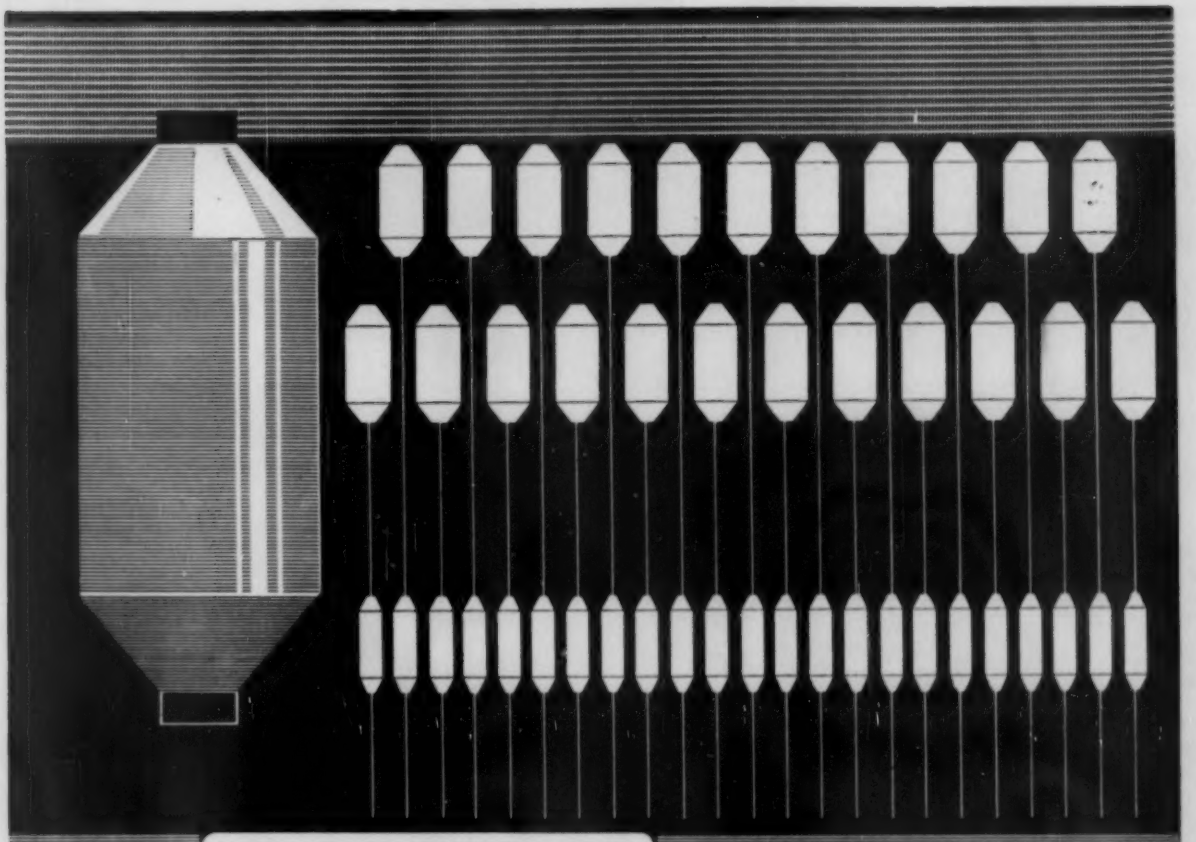
With almost 50 years of specialized experience in textile air conditioning, Bahnson engineers can more efficiently analyze your air conditioning needs. Based on expert professional counsel in the beginning, correctly engineered component parts can be fitted correctly to specific operating and manufacturing requirements.

Let a Bahnson representative assist you in your air conditioning needs. There is no obligation.

Bahnson
AIR-O-MATION

THE BAHNSON COMPANY • WINSTON-SALEM, N. C.

On the stage at Atlantic City Textile Machinery Show — Booth 11-18



INGOLSTADT

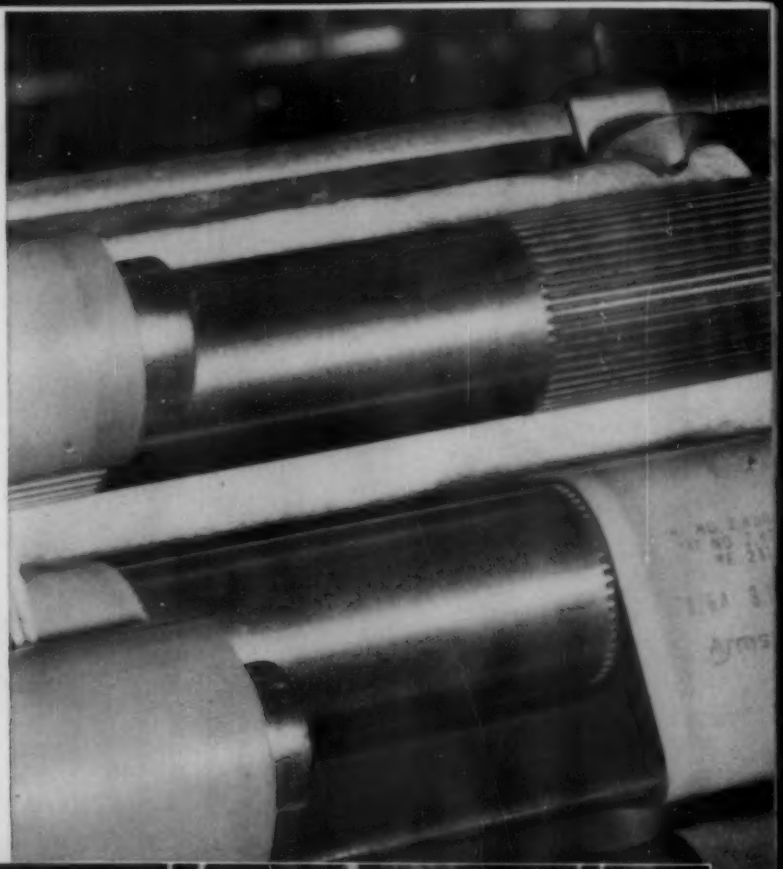
Planning and supply

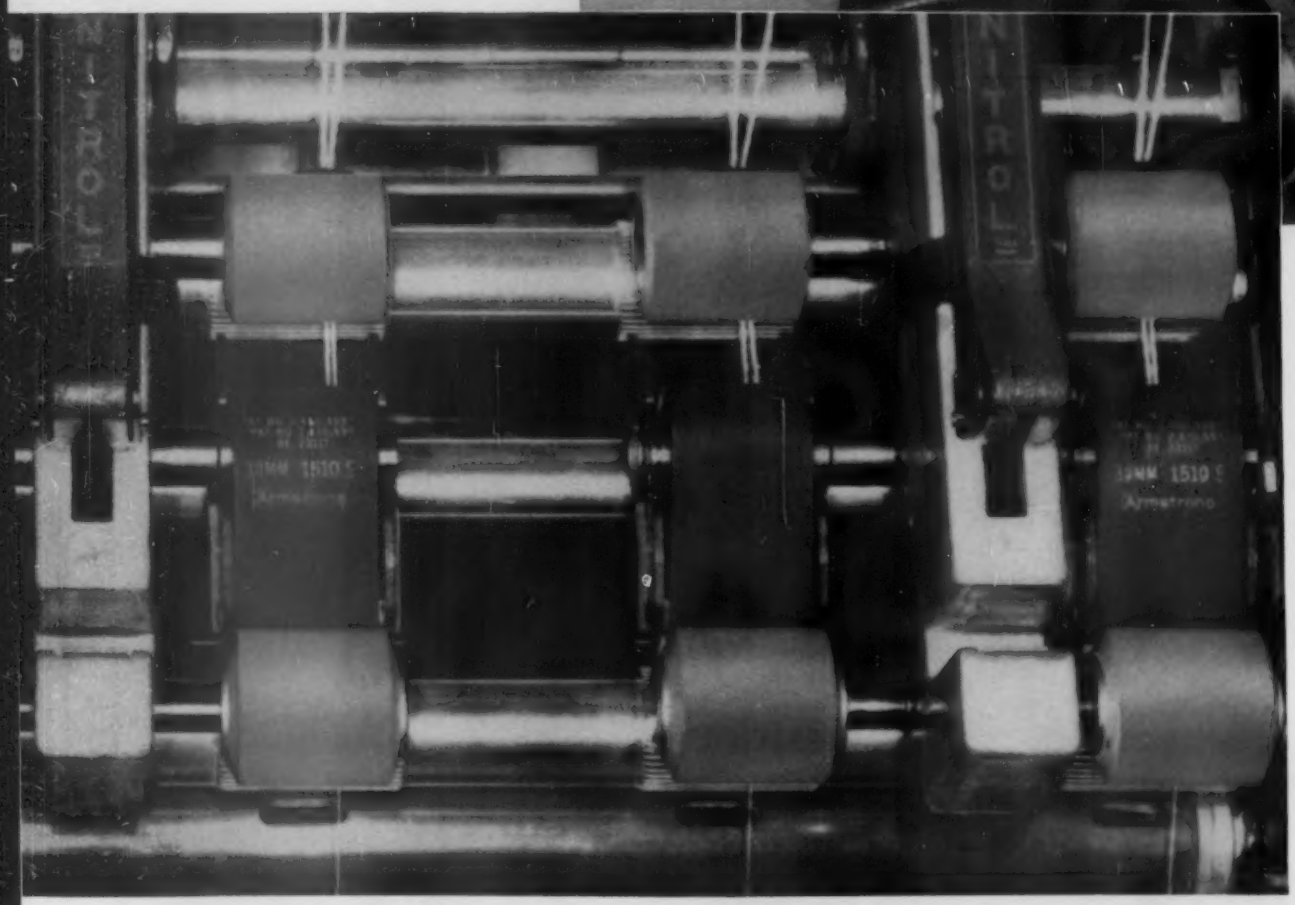
of complete spinning plants for cotton, worsted,

artificial and synthetic staple fibres

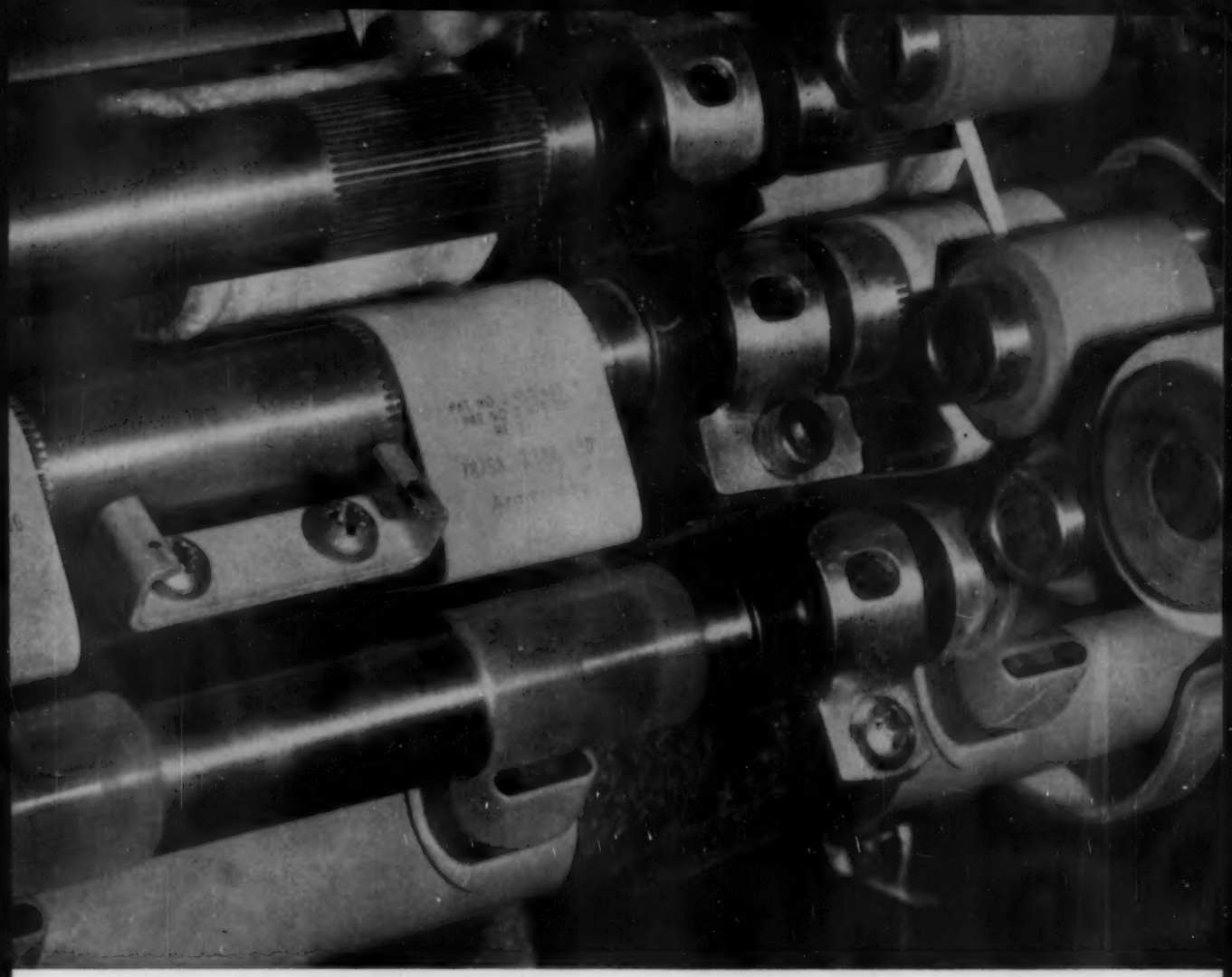
DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT/Donau

For long-apron systems, Armstrong Accotex NO-7876 is recommended. Two special rubber compounds give it super-flexibility, superior fiber-handling characteristics, and unusual resistance to flex cracking and ozone.





For close-pin double-apron systems, use Accotex NO-7075. This black-and-white apron pioneered the two-compound principle in aprons. Special synthetic rubber compounds give it smooth drafting properties and good resistance to abrasion.



Spin top-quality yarn on any high-draft frame with Armstrong Accotex Aprons

For best performance on any high-draft frame, your spinning aprons should have correct friction . . . optimum flexibility . . . dimensional stability . . . and resistance to abrasion and cracking.

You get all these qualities when Armstrong Accotex Aprons are running on your frames. These aprons help you get high production and high quality . . . shift after shift . . . on any drafting system, with any fiber or blend.

The special synthetic rubber compounds used in Accotex Aprons are one big reason for this performance. These rubbers . . . different for each apron surface . . . have the right friction characteristics for smooth drafting, and they have built-in resistance to abrasion and cracking.

Another reason is the patented construction of Accotex Aprons. A strong cord interliner maintains dimensional stability and helps to provide the flexibility needed for good performance.

If you're not already using Accotex Aprons, ask your Armstrong representative to arrange for a test next time he calls. Or write for more information to Armstrong Cork Company, Industrial Division, 6404 Dauphin Street, Lancaster, Penna.

Armstrong ACCOTEX APRONS

1860–1960 Beginning our second century of progress

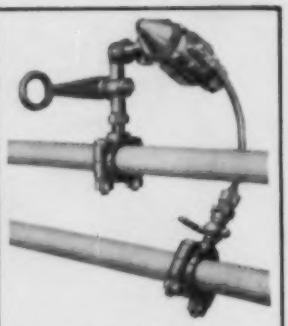
CIRCLE 25 ON READER SERVICE CARD

These Amco Air Conditioning Devices are designed for close control of atmospheric conditions within your mill

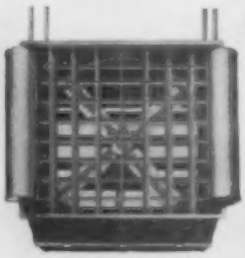
No. 6 Atomizer

Atometer

Humidity Control



Aeromizer

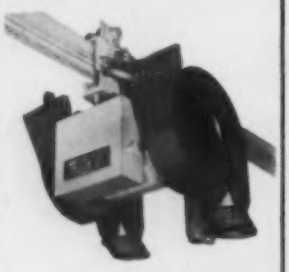


Evaporative Cooling Unit

Air Washer

Modulating Interrupter

Ceiling Cleaner



Loom Cleaner

Sling Psychrometer

Blow-Thru Diaphragm Valve

See them at the
TEXTILE SHOW
at
ATLANTIC CITY
May 23-27 • Booths 51-56

Amco Air Conditioning Devices are *quality* textile mill equipment . . . backed by a company with more than 70 years experience in solving textile air treatment problems. You can always rely on Amco to give you dependable advice and an expert installation best suited to your needs.

AMCO

Since 1888

Air Conditioning Equipment — Textile Specialties

American Moistening Company, Cleveland, North Carolina

Branches: Atlanta, Ga., Providence, R. I., Toronto, Ont.

CIRCLE 27 ON READER SERVICE CARD→

Another product in Gates complete line of Textile Accessories

Why Gates Lug Straps last longer... insure smoother operation

Super Tex-Hide Lug Straps

Users report up to five times longer service on their heaviest looms from Super Tex-Hide than from any other strap.

New Thin-Tex Lug Straps

When extreme flexibility and much lighter weight are needed, Thin-Tex Lug Straps give up to 25% longer life than ordinary straps... and smooth out loom operation.

Because of the great strength of Tex-Hide—a product of Gates *Specialized* Research—the block can be molded into the strap without the use of bolts or rivets. As a result, straps are streamlined and light in weight.

Yet, because of their superb resilience, they give longer service, and smoother operation, *than any other strap you have ever used.*

2 big advantages of Gates Tex-Hide Lug Straps

1 Tex-Hide Lug Straps combine great strength with unsurpassed resiliency. They soak up blows and shocks *without taking any permanent stretch.*

2 Further, the great resiliency insures long life for *all parts* of the picking motion, and gives extended periods of operation *without any strap adjustments.*

Gates Distributors are in the YELLOW PAGES

The Mark of Specialized Research

Gates

The Gates Rubber Company

Denver, Colorado

Gates Rubber of Canada Ltd., Brantford, Ontario

TPA 902

Take-up Roll Coverings
Card Bands
Cone and Evener Belts
Spinning Frame Drives

Reversible Pickers

Tex-Hide Harness Straps

Tex-Hide and Voice Loop Pickers

4-in-one Check Straps
Multi-Check Straps

Gates Textile Accessories

Dary RING TRAVELERS . . .

SINCE 1898

THE DARY RING TRAVELER CO.

TAUNTON, MASSACHUSETTS

LINDSEY I. PHILLIPS, Treasurer, Taunton, Mass.

Consult your friendly Dary Representative:

JOHN H. O'NEIL — Box 720, Atlanta, Ga.

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CRAWFORD "JACK" RHYMER — Box 2261, Greenville, S. C.

Now!

textile processors spell it

... best buy for your detergent dollar!

OTHER TEXTILE NACCONOLS

NACCONOL NR Flake
NACCONOL DB Dense Beads
NACCONOL DBX Super Dense Beads

All Minimum 40% Active Organic Content!

NACCONOL® SL Alkyl Aryl Sulfonate is the largest selling liquid detergent in the textile industry.

First, NACCONOL SL delivers more cleaning power per dollar on an active ingredient basis than most dry products.

Second, it cuts production time and costs . . . minimizes waste. Liquid NACCONOL SL is clean, easy to handle, requires no dissolving.

Convince yourself of NACCONOL SL's economy with a mill trial. Call or write your nearest National Aniline office for a test sample.

NATIONAL ANILINE DIVISION
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Atlanta Boston Charlotte Chicago Greensboro Los Angeles
Philadelphia Portland, Ore. Providence San Francisco
In Canada: ALLIED CHEMICAL CANADA, LTD., 100 North Queen St., Toronto 18
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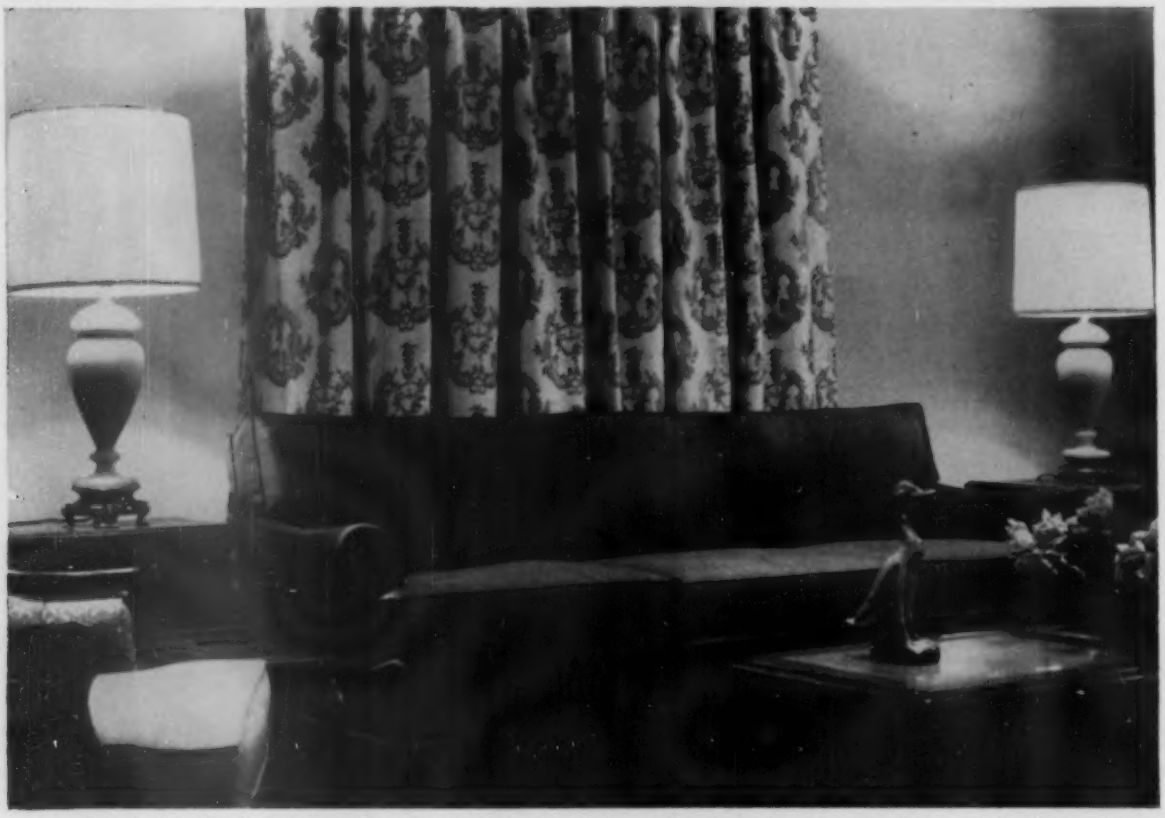
ALLIED CHEMICAL INTERNATIONAL • 40 Rector St., New York 6, N. Y.

Allied Chemical

Another new development using

B.F.Goodrich Chemical *raw materials*



Superba Print Works Division of Home Curtain Corporation, Paterson, New Jersey, uses Hycar in inks to print these drapery fabrics. Finished drapes feature the "Add-A-Drape" patented design that permits buying single width draperies and joining them into multiples at home—panels can be matched or mixed and disengaged separately for easier washing or dry cleaning. B.F.Goodrich Chemical Company supplies the Hycar nitrile latex.

Drapes are "guaranteed against crocking"

. . . ink contains Hycar

"Every yard of our printed fabrics can be guaranteed by us against crocking," says the printer of these fabrics. The reason: Hycar nitrile latex is added to ink formulations as a pigment binder.

Hycar not only provides excellent pigment binding properties and crock resistance, it also gives ink formulations flexibility and good aging properties to sunlight—ideal for applications like this drapery fabric. In addition, Hycar makes possible excellent washfastness and dry cleaning properties.

Here's another example of service you can get to produce better textiles for wider appeal, often at lower cost. For more information, write Dept. KB-2, B.F.Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

PRODUCTS FOR TEXTILE IMPROVEMENT

B.F.Goodrich Chemical Company
a division of The B.F.Goodrich Company

B.F.Goodrich

GEON vinyls • HYCAR rubber and latex • GOOD-RITE chemicals and plasticizers

Velvet surfacing operation on Sonoco cones

The Velvet cone surface—another Sonoco "first"!

Sonoco created the Velvet Surface to overcome the problems of winding fine cotton and synthetic yarns. This surface takes the primary winds without slippage—and, in delivery, the yarn feeds off without sloughing.

Trouble-free cone winding and delivery depends on control of yarn tension. In all cone winding, tension at the traverse extremes pulls yarn toward the cone center. Only cone surfaces which restrain this tension can provide the foundation for a well formed package. When the cone and the cone surface are selected for a specific yarn, a big step is taken toward better and faster production. Sonoco can supply you with the right combination.

The Sonoco Velvet Surface cone is typical of the dependable products manufactured by a fully integrated company with 60 years' experience in creating and producing all types of textile paper carriers. Only Sonoco, in its field, provides the knowledge, skill and capacity to meet the ever-changing techniques of the textile industry. Let Sonoco experience help you!

SONOCO

Products for Textiles

SONOCO PRODUCTS COMPANY

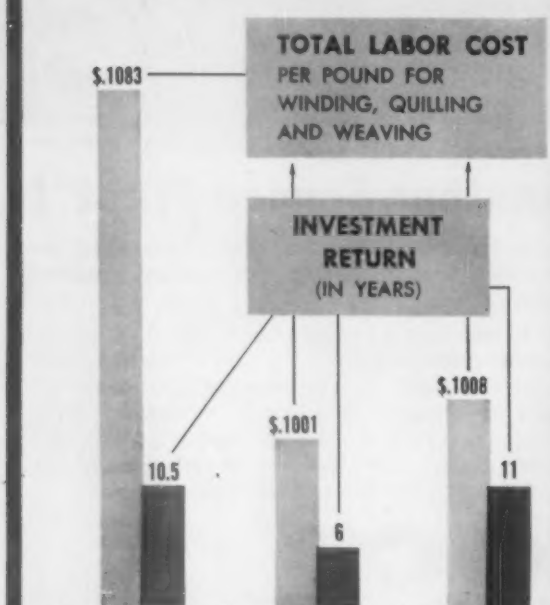
ATMA
American Textile Machinery Exhibition - International
Booth Nos. 82 and 83
May 23-27, 1960

Main Office—Hartsville, S. C. • Mystic, Conn. • Akron, Ind. • Lowell, Mass. • Phillipsburg, N. J. • Longview, Texas • Philadelphia, Pa. • La Puente, Cal. • Fremont, Cal. • Atlanta, Ga. • Granby, Quebec • Brantford, Ontario • Mexico, D. F.

CIRCLE 31 ON READER SERVICE CARD

ATMA Parade of Progress

ONE OF MANY EXAMPLES: 15's average count, using 4.5 lbs. cone



THE MOST ECONOMICAL FILLING PREPARATION NOW AVAILABLE... WITH

Schlafhorst SERVOLOOM AUTOCOPSER

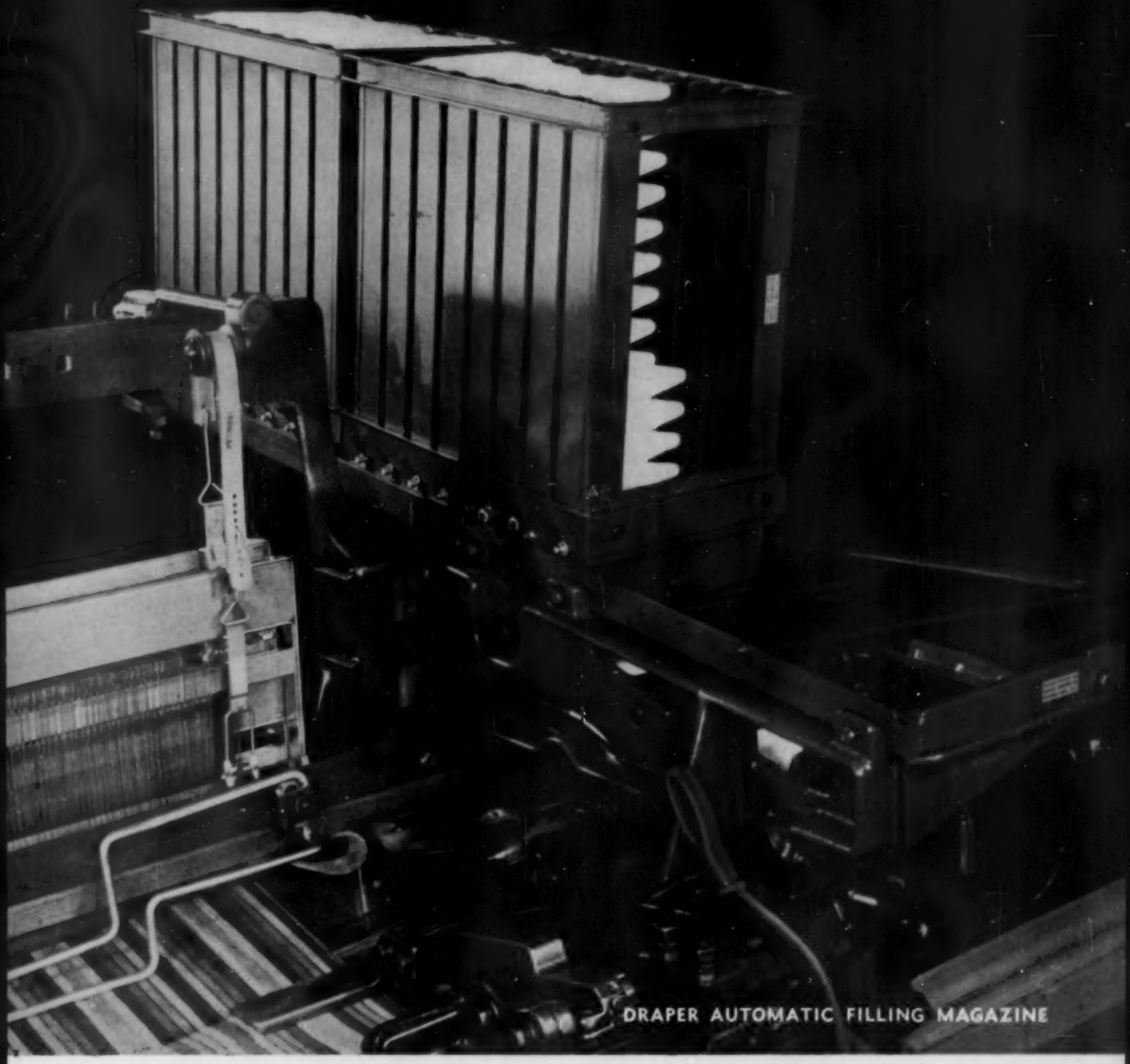
LOADING DRAPER AUTOMATIC FILLING MAGAZINE

Call your nearest Terrell sales engineer for more examples and information, and investigate this new approach to mill automation at the International Textile Exposition.

THE

TERRELL

MACHINE COMPANY, INCORPORATED
CHARLOTTE, N. C., U. S. A.



DRAPER AUTOMATIC FILLING MAGAZINE

INCREASE ***loom performance***

IMPROVE ***cloth quality***

REDUCE ***mill costs***

The Draper Automatic Filling Magazine, *brings new automation to your weave room . . .* reduces filling handling to a minimum.

Lower labor costs, more continuous loom operation, cleaner yarns and fewer cloth seconds are direct advantages gained from the use of this magazine.

Your Draper representative will be glad to show you the many benefits that can be obtained from the Draper Automatic Filling Magazine.

DRAPER CORPORATION

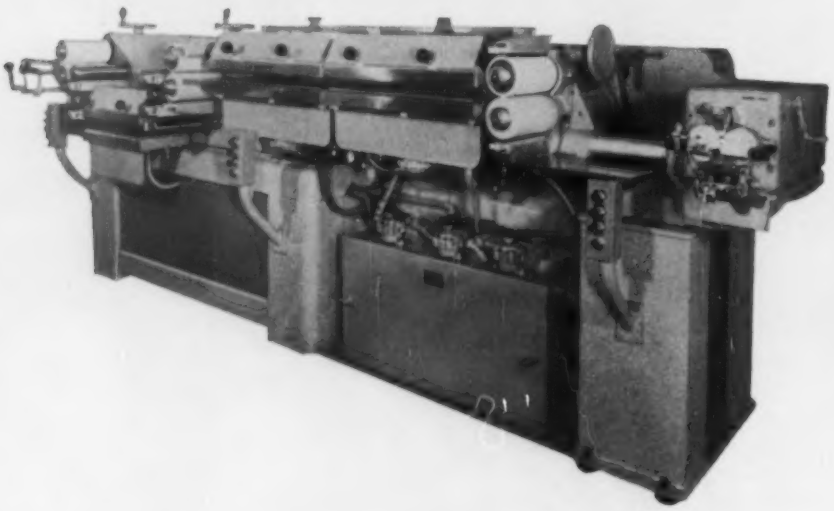
HOPEDALE, MASS.

ATLANTA, GA. GREENSBORO, N.C. SPARTANBURG, S.C.

ATMA Parade of Progress...

3 machines in 1

New Turbo TP Machine draws, stabilizes, and crimps thermoplastic fibers in one continuous operation . . .



Until now, it required three separate operations to convert tow bands of undrawn fibers into salable tow — draw frames, conditioning machines, and crimpers.

With the new Turbo TP Machine, fiber producers can deliver tow with higher tenacity, lower elongation. Fibers processed on the TP Machine have superior fiber characteristics for cut staple or tow.

In fiber plant operation, it has been found that the TP Machine has an advantage over draw-frames in dollar machinery expenditure versus pound output.

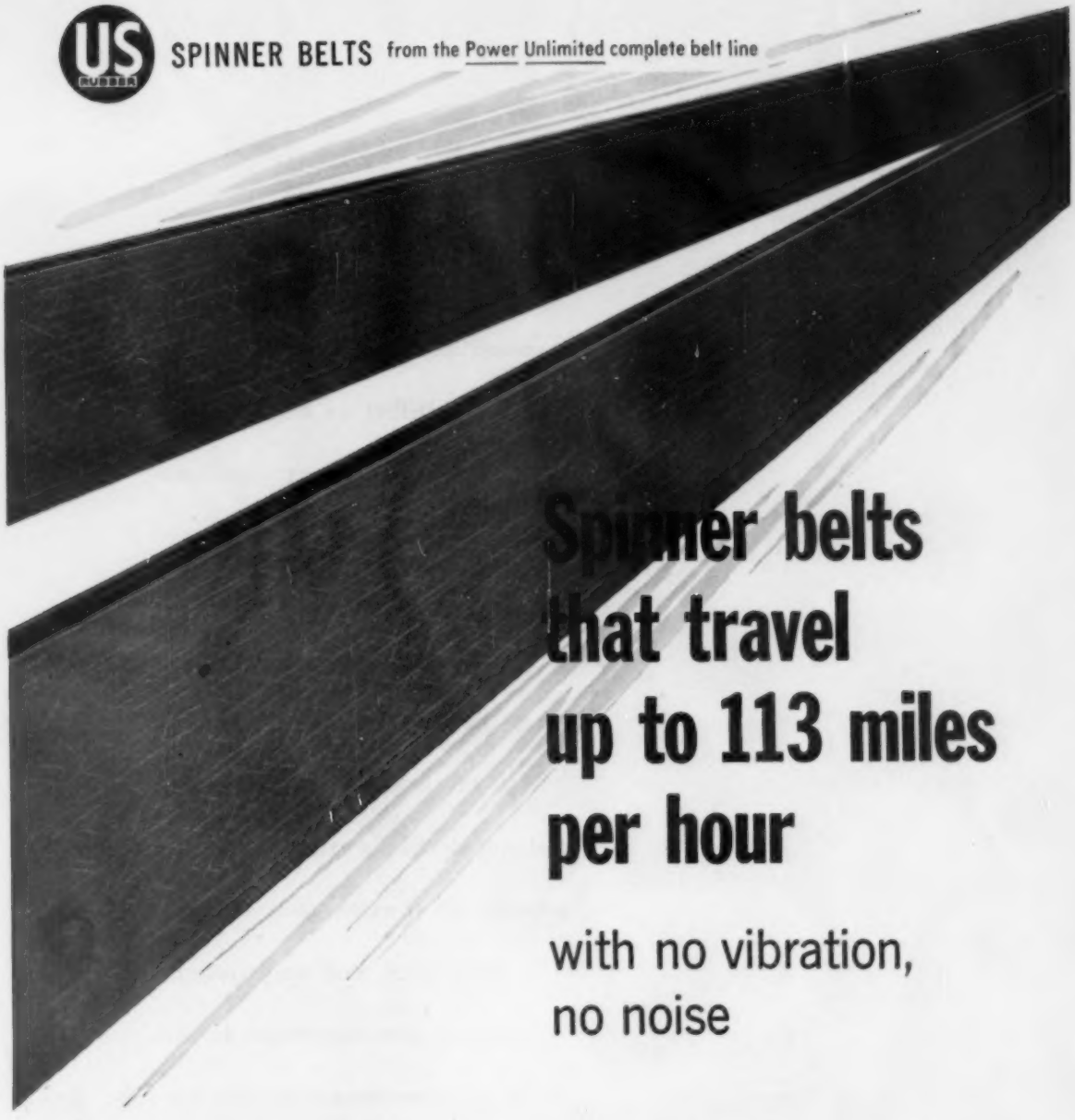
For a practical demonstration, let your thermoplastic fibers be drawn on the production unit in the Turbo laboratory — and you be the judge. Or ask to see a Turbo representative.

TURBO

. . . a family of engineered machines

TURBO MACHINE COMPANY, LANSDALE, PA.

SPINNER BELTS from the Power Unlimited complete belt line



Spinner belts that travel up to 113 miles per hour

with no vibration, no noise

AND NOW—"U. S." presents a truly superior spinner belt. This belt travels as fast as 10,000 feet per minute—to meet the higher speeds made necessary by the high reduction in the length of spinning machines.

Special construction methods developed by U. S. Rubber engineers result in this belt having only three splices, regardless of its length. To prevent contamination of the yarn on the spinner, the outside surface of the belt jacket is cut and constructed on a bias and is smooth and free of surface rubber.

This remarkable belt has high strength and low stretch. Its superbly engineered construction and the minimum number of splices *assure uniform twist and smooth spindle operation.*

• • •

When you think of rubber, think of your "U.S." Distributor. He's your best on-the-spot source of technical aid, quick delivery and quality industrial rubber products.

Mechanical Goods Division

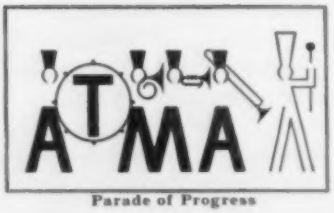
United States Rubber

WORLD'S LARGEST MANUFACTURER OF INDUSTRIAL RUBBER PRODUCTS

Rockefeller Center, New York 20, N.Y. In Canada: Dominion Rubber Company, Ltd.

The 10 outstanding
machines which Whitin will
exhibit at Atlantic City
will have this in common;
each will do its specific job
better or faster, and
more economically than that job
has ever been done before.
Each machine will show
unmistakable evidence of the
advanced textile technology,
research and engineering
which are inherent in all
machinery made by

The 10 machines listed below
will be in operation in Booth 212 at the
AMERICAN TEXTILE MACHINERY
EXHIBITION-INTERNATIONAL
Atlantic City, N. J., May 23-27, 1960



Parade of Progress

WHITIN

PIEDMONT SPINNING
COMMODORE TWISTER
SUPER LAP MACHINE
KW AMERICAN SYSTEM SPINNING
AMERICAN WORSTED COMBER

WHITIN

MACHINE WORKS • Whitinsville, Mass., U.S.A.

CHARLOTTE, N.C. • GREENSBORO, N.C. • ATLANTA, GA.
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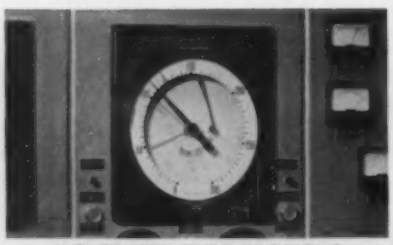
Sales agents in all principal textile centers

FLEX-SPIN WOOL SPINNING FRAME EVEN-DRAFT DRAWING FRAME
PACEMAKER TWISTER SUPER J COMBER MODEL P ROVING FRAME

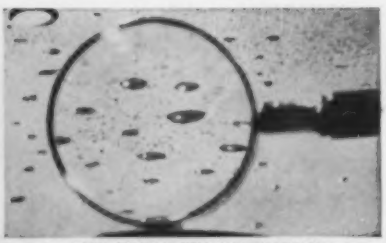
DOUBLE PLY Dayco Rub Aprons are fused, rubber impregnated, reinforced fabric which cuts eccentric motion 33%. It lengthens flexing life and freezes buttons solidly in place. Result: perfect tracking, no-slip drive due to tighter hug to rolls.

DELIVERS 33% MORE YARN UNIFORMITY.....

IMMUNE TO EMULSION OILS



NO TEMPERATURE PROBLEMS



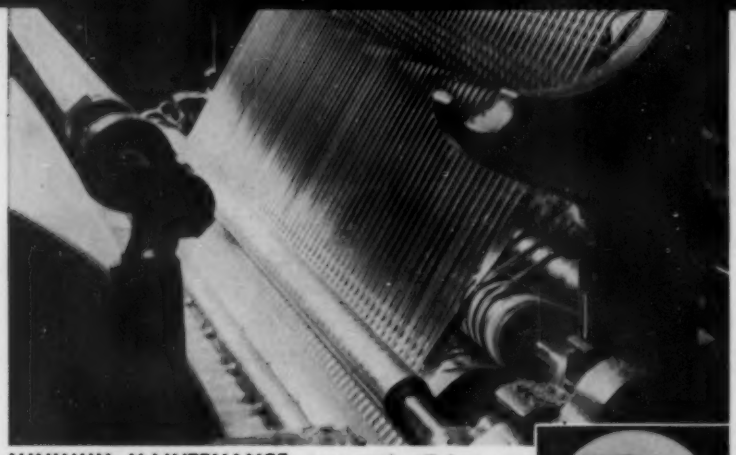
NO HUMIDITY PROBLEMS

REINFORCED FOR BETTER TRACKING

NO WOOL PIGMENT ABSORPTION

NO GLAZING, NO SLICKING

NO SWELL with Dayco Rub Aprons. Their special formulated texture keeps them free of emulsion oils that cause growths and rubbing surface breakdowns on ordinary aprons. Temperature and humidity changes have no effect on the Dayco Rub Apron. Color pigments from dyed wool are not absorbed . . . slicking and glazing are reduced to a negligible minimum.



MINIMUM MAINTENANCE, top card efficiency, better web uniformity are yours with Dayco Endless Condenser Tapes. Precision compounding prevents stretch and cracking, reduces take-ups and groove-jumping. Oil deterioration, static are eliminated. The permanent square edge permits close-tolerance nesting for cleaner cuts and minimum stealing. They're longer lasting—yet original cost is lower.

HIGHEST COEFFICIENT OF FRICTION of any apron on the market. That is the important difference in this remarkable Dayco Rub Apron. It means proper yarn condensing and more high quality yarn per machine. Because the surface keeps renewing itself, you also get longer life with heavy-duty Dayco Rub Aprons.

. . PLUS MORE YARN PER CARD

with DAYCO RUB APRONS

Here with Dayco Rub Aprons is a range of special built-in textures answering all the individual rub needs of any mill. Each has the highest coefficient of friction of any apron available today. Each is so designed and formulated that it maintains its condensing efficiency unchanged through its lifetime of use.

The unique advanced 2-ply construction minimizes need for adjustments, delivers longer trouble-free service, requires less maintenance, no downtime.

Look for more yarn per card and 33% greater yarn uniformity with cards equipped with Dayco Rub Aprons—thanks to Dayton's exclusive surface texture that stays good from the first day of use without change.

Ask your Dayco Representative to set up a test. Phone or write the Dayton Rubber Co., Textile Division, 401 South Carolina National Bank Bldg., Greenville, South Carolina.

Dayton Rubber

Dayco and Thorobred Textile Products for Better Spinning and Weaving.

OVERSEAS PLANT: THE DAYTON RUBBER CO., LTD., DUNDEE, SCOTLAND.

Reasons behind the fast-growing trend to DAYCO SYNTHETIC CONDENSER TAPES

THE SUCCESS of Dayco synthetics in cots and aprons, loop pickers and lug straps is also effecting a big change in the use of conventional condenser tapes. "Leather men are weather men" they say because the expert can look at a piece of leather and tell you whether the animal from which it came had a dry year. This legend is the clue to the growing acceptance of Dayco synthetic condenser tapes, bringing as they do, an end to the constant humidity and weather problem.

But the Dayco synthetic condenser tapes are earning a great deal more attention for other good and practical reasons. One is the fact that Dayton, for instance, can now make them to closer tolerances. This means a remarkable precision fit in the steel roller grooves.

The Dayton Endless Condenser Tape besides possessing very close-tolerance, non-permanent stretch has a permanent square edge to eliminate groove-jumping, twisting and turn-over.

These Dayco condenser tapes have ended oiling maintenance problems and costs and the nuisance of oil deterioration.

The reason Dayton Endless Condenser Tapes last longer, yet cost less, is a small consideration compared to the really big reason for the switch to Dayco tapes. Top card efficiency, better web uniformity, cleaner cutting, minimum stealing are the real reasons.

CIRCLE 39 ON READER SERVICE CARD

CONDOR *Whipcord* BELTS

OUTLAST *3 to 10* ORDINARY BELTS

NO COVER SEPARATION

Exclusive Extensible-Tip Cover Splice *extends* stress over wide area with rubber rivets . . . prevents cover separation—prolongs belt life.

Here's the all-purpose belt designed for hard wearing installations—ideal for drives with short centers and small take-up, small pulleys and reverse bends, high speeds and heavy loads at high tensions. Condor Whipcord Belt features an endless-wound, sealed-in cord construction which is prestretched during manufacture.

Extremely flexible, Condor Belts also offer exceptional advantages where serpentine drives supply power for several operations. They won't shrink and are virtually unaffected by atmospheric changes. And Condor's exclusive Extensible-Tip cover splice and rubber rivets dissipate stress when rounding pulleys . . . eliminate cover separation.

The results? Condor Whipcord Belts outlast as many as 10 ordinary belts on the toughest drives! Let an R/M distributor help you select the belt engineered to give *you* "More Use per Dollar."

ADVANTAGES

- **For High Speeds, Heavy Loads, Short Centers, Small Pulleys, Reverse Bends . . . at High Tensions**
- **Low Inelastic Stretch**
- **Length Unaffected by Atmospheric Changes**
- **Extremely Flexible and Strong**
- **No Ply Separation. No Splice in Tension Member**
- **Selection of Driving Surfaces to Meet Tension Requirements**

"MORE USE PER DOLLAR"

RM1062

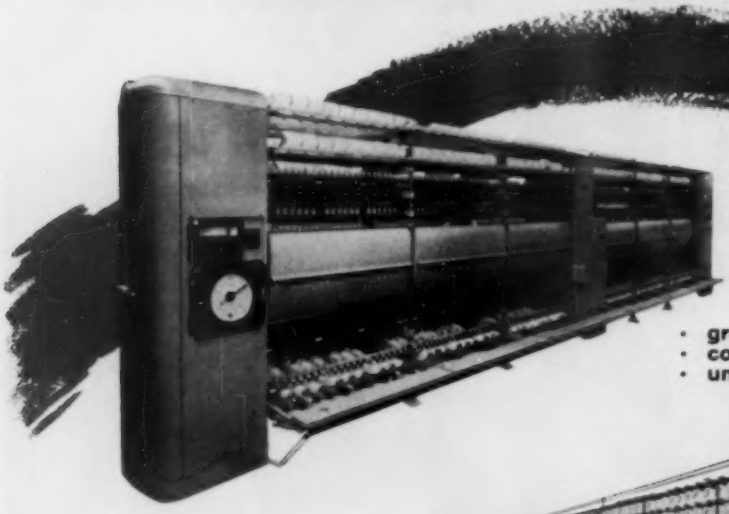
ENGINEERED RUBBER PRODUCTS ..."MORE USE PER DOLLAR"

RAYBESTOS-MANHATTAN, INC.

MANHATTAN RUBBER DIVISION, PASSAIC, NEW JERSEY

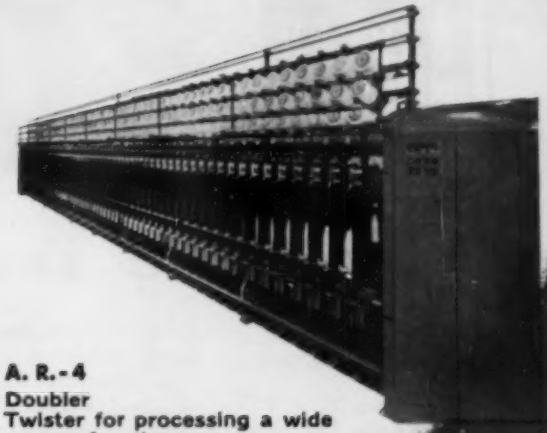
Insure UNIFORM quality

From the supply package to the finished cone. These 3 machines produce the finest and most uniform quality of crimped thermoplastic yarns for weaving, knitting, or tricot requirements.

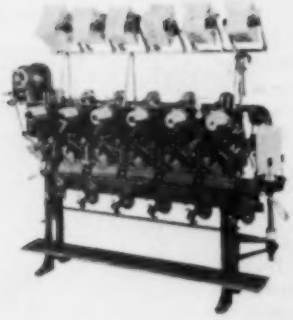


F. T. MACHINE *

- greater elasticity
- complete crimp retention
- uniform dye affinity



A. R.-4
Doubler
Twister for processing a wide range of various yarns.



M. WINDER
with special attachment
for building bobbins of controlled density.

These machines will be on display at the 1960 American textile machinery exhibition Atlantic City N.J. booth 1054 and 1153.

** Sold under licence in USA, Mexico and Canada by Willing.*

60 - ITW

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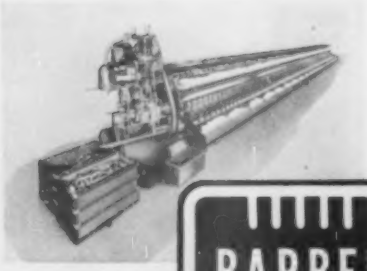
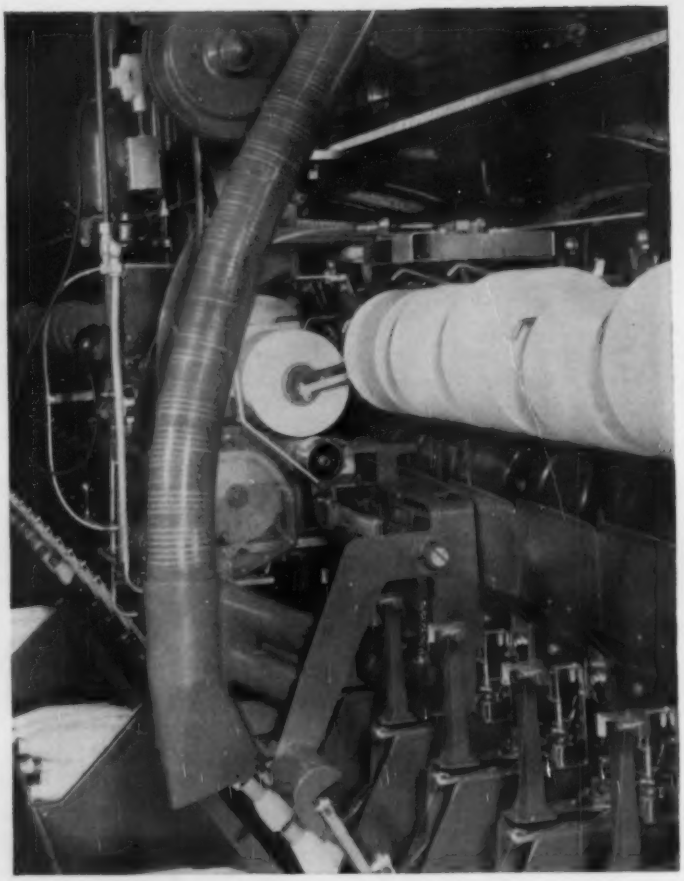
AMERICAN
TEXTILE MACHINERY
EXHIBITION

ATLANTIC CITY

NEW JERSEY
MAY 23 - 27, 1960



BARBER COLMAN



A close-up of the traveler moving along the machine, picking up the end from each bobbin and automatically tying it to the loose end of the corresponding cheese.

NEW AUTOMATIC SPOOLER

TYPE "F" MAKES LARGE CHEESES from LARGE BOBBINS

Increased capacity in the new Type "F" Automatic Spooler shown above permits spooling of cheeses up to 6½ lbs. from bobbins up to 12¼" long. This has been accomplished by the improvement of a number of distinctive Barber-Colman features. The bobbin pockets have been lengthened and the skewer mechanism enlarged. Wider bakelite winding drums have crossover grooves and are permanently balanced. Double cheese-supporting arms have built-in brakes.

Quick-set snick plates, a feature proved highly successful in the elimination of yarn imperfections, have been redesigned. A tape-breaker mechanism is an innovation which greatly improves the build of the cheese. The use of 6½ lb. cheeses as produced on this machine can lead to production improvements for a wide variety of fabrics and in a number of important processes including knitting, quillers, and shuttleless looms. *For full information on details of improvements and how the new Type "F" Automatic Spooler can benefit you, see your Barber-Colman representative.*

"EVERY KNOT A TRUE WEAVER'S KNOT"

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

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Norgren MANUAL-DRAIN AIR-LINE FILTERS

maintenance is this quick... this easy!

6 Top of filter remains connected to air line.

5 Filter element is held on by baffle plate.

4 Baffle plate is easily unscrewed by hand.

3 Clamp ring has quick-opening spring clip.

2 Filter bowl is held on by clamp ring.

1 Drain cock is easily turned by hand to empty liquid.

No tools required! Fewer parts to handle!

Norgren Manual-Drain Air-Line Filters can be quickly and easily disassembled to remove the filter element for cleaning. No tools are required. There are only 4 loose parts to handle, and reassembly is simple...a quick, easy job for anyone.

As a result, a Norgren manual-drain air-line filter is faster and easier to service than any other make of filter. This adds up to a big yearly saving for you in maintenance time and money.

Norgren Filters give you top performance

in removing damaging solids and liquids from an air line. Available with transparent or metal bowls. ¼", ⅜", ½", ¾", 1" pipe sizes.

For further information on the money-saving features of Norgren manual-drain air-line filters or Norgren automatic-drain air-line filters, call your nearby Norgren representative listed in your telephone directory—
or WRITE FOR DESCRIPTIVE LITERATURE

Compare Norgren with other makes of air line filters!

MAKE	NORGREN	A	B	C	D	E
Loose Parts to Disassemble	4	9	16	13	6	12
Tools Required for Maintenance	NONE	Wrench	Wrench & Screw-driver	Screw-driver	Wrench	Wrench & Pliers
Tool Operations Required	NONE	2	10	16	2	4

C. A. NORGREN CO.

FOUNDED IN 1926 — 3404 SOUTH ELATI STREET, ENGLEWOOD, COLORADO

The Cocker Multiple Beam Tricot Warper

Head Diameters up to 32″

Versatile

2 – 21 inch beams
1 – 42 inch beam
1 – 55 inch beam
1 – 50 inch Raschel beam

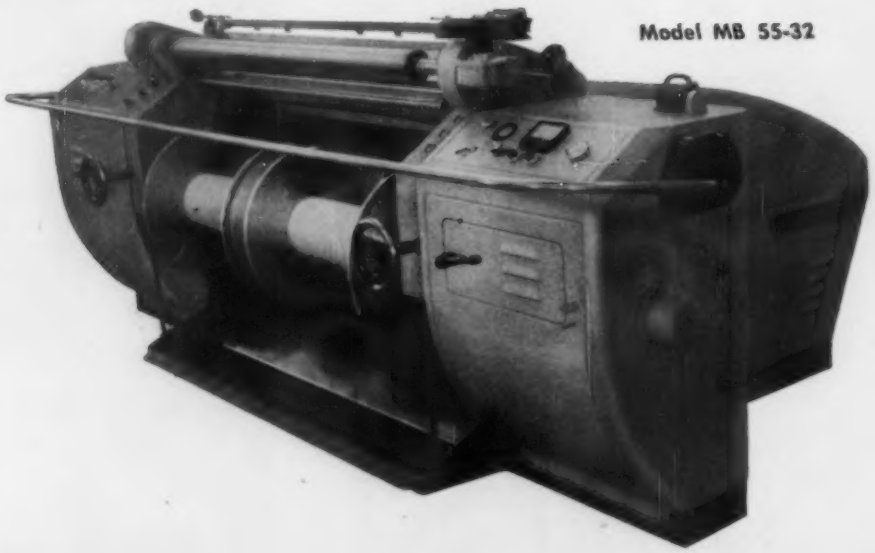
Fast

Normal sustained operating speeds up to 600 YPM.

Convenient

Individual controls are within full view and easy reach of operator. Simple changeover from one set-up to another. Has all of the most modern features and safety devices.

Model MB 55-32



Let us give you full information on this revolutionary Tricot Warper.

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Oxford 7-2242

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WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

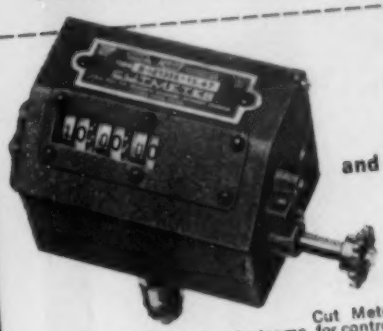
Veeder-Root helps you Cost-Control your Mill...

From Pick Counters...

2-3-4 Pick, Hank, Yardage & Knitting Machine Counters

These flexible counters record production separately for each of 2, 3, or 4 shifts, providing a basis for wage payment, production planning, production efficiency, calculations, etc.

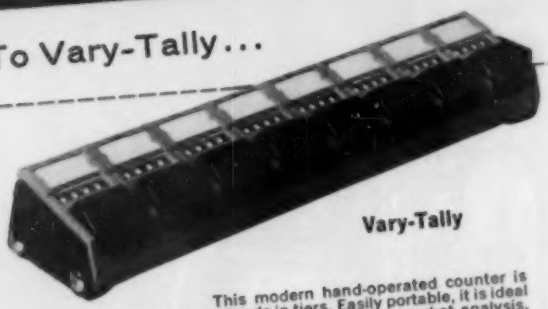
To Loom-Cut Meters...



Loom Cut Meters and Predetermining Counters

Cut Meters are predetermining counters for looms, for controlling lengths of cloth woven, without cut marks . . . and thus avoiding over-runs and short pieces.

To Vary-Tally...



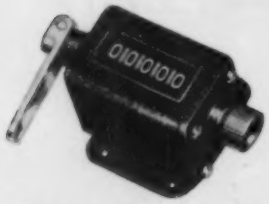
Vary-Tally

This modern hand-operated counter is arranged compactly on stands in tiers. Easily portable, it is ideal for order, stock, inventory control, sales and market analysis, payroll denomination, estimates, traffic control and product inspection. *Can be* supplied in any of 67 combinations up to 6 tiers high and 12 units wide.

Pick counters, designed to help you control your production; loom cut meters for pre-setting cut-lengths; Vary-Tally for hundreds of order, stock, inventory control, inspection, analyses uses — These are but a few of the many Veeder-Root counters which can make your profit-picture brighter.

Veeder-Root counters help modern mills to *Con*trol production and costs . . . with accurate, up-to-the-minute data. Your local Veeder-Root representative can give you details on how to completely equip your mill with these dollar-saving counters. Call him in *today*.

Small Reset Counters



Used on a wide variety of textile machines, including breakers, winders, marking machines, knitting machines and bobbin strippers.

Hosiery Dozens Counter

Used in inspection or on knitting machines (as a production counter) . . . shows single pairs and total dozens count.

Double-Wheel Measuring Counters

Ball Bearing — "Exact Ratio" Geared Reset Counter registers linear units (feet, yards, ⅛ of a yard) as material passes under the friction wheels.

High Speed Reset Double Wheel Counter runs suitable from a shaft, measuring drum, cloth, paper, or other material at speeds up to 6,000 rpm or 3,000 cpm.

Count/Pak

One of the new Veeder-Root Count/Paks — an economical device for high velocity, noncontact counting and controlling. Ideal for use on bobbin strippers, also used on folders to permit multiple folder control by a single operator. Speeds up to 2,500 counts per minute with absolute accuracy.

Reset Magnetic Counters

Base or panel mounted. Ruggedly built for speeds up to 1,000 counts per minute. Widely used for remote indication.

Veeder-Root

HARTFORD 2, CONNECTICUT

"The Name that Counts"

New York • Chicago • Los Angeles • San Francisco
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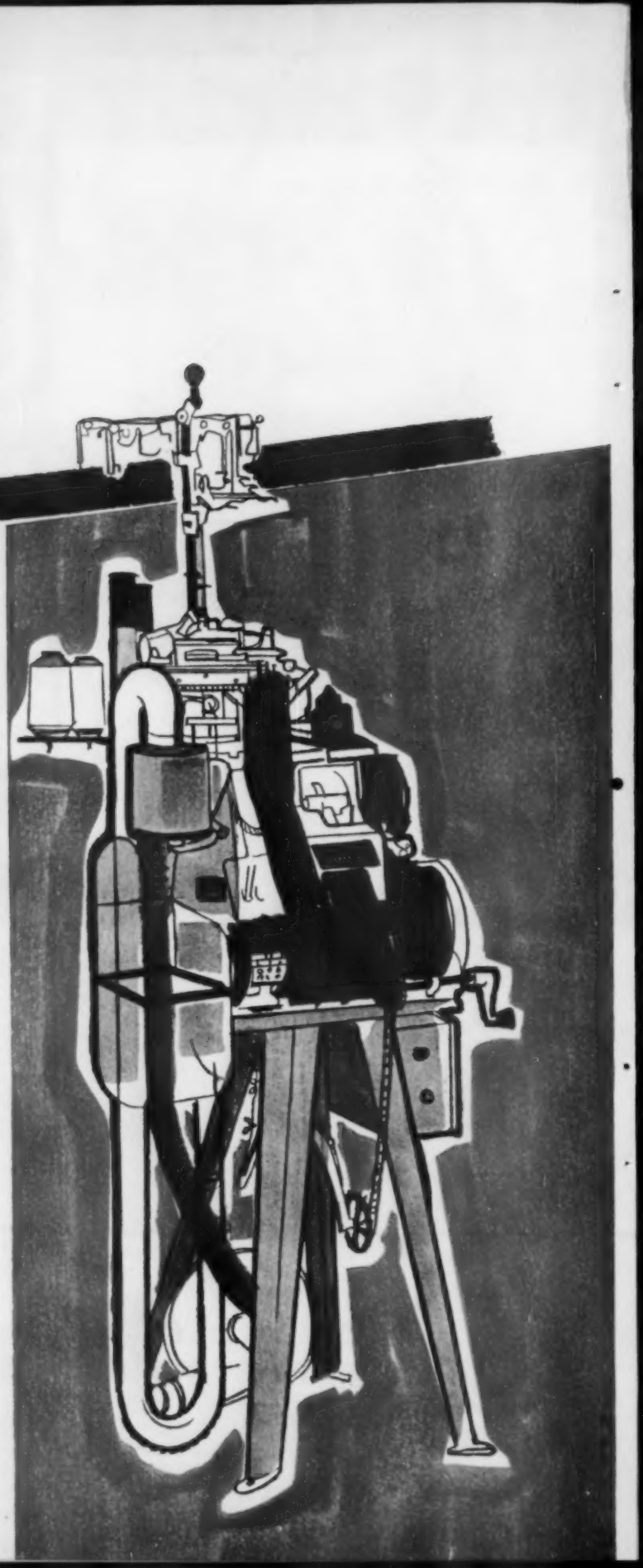
now peak production of the finest seamless nylon stockings



announcing the new "Reading-Booton" twin-feed machine

- **2-feed automatic, highly efficient end trimmer. Trims all ends to a length of from ¼ to ⅜ inch.**
- **New high standard of fabric quality**
- **Continuous, high-speed production**

The new "Reading-Booton" Twin-Feed Machine opens new profit possibilities in the knitting of ladies' seamless stockings. It gives you twin-feed production, plus amazing simplicity of operation, and trouble-free performance.

New features developed by Textile Machine Works for the proven Booton Machine. This new precision machine belongs in your production planning. Backed by our world-wide service organization. You'll want to see the new "Reading-Booton" in operation before you buy any seamless machine. Call us today.

TEXTILE MACHINE WORKS

READING, PENNA.

CIRCLE 46 ON READER SERVICE CARD

15 TIPS THAT WILL MAKE YOU A BETTER MANAGER

These days, a man with management talent is worth his weight in gold. Here's how you can acquire the skills you need to do a better management job—

DOESN'T MATTER WHAT YOUR JOB IS—superintendent, plant manager, production manager, industrial engineer, overseer, or even company president. Whatever your job is, if you're a manager now—and if you expect some day to move into a still bigger job—you need to master the skills of management.

These skills don't come naturally. Few people, if any, are born with them. And you won't find any quick, easy shortcuts to masterful management. Yet if you're going to succeed as a manager you must acquire these skills—must keep working at them—must keep improving them. That takes patience and resolution. But if you've got some aptitude for self-instruction, plus a will to improve yourself, you can make these management skills your own.

In the text that follows you'll find 15 tips for better management. Add them all together, and they look like a pretty big order. But don't let that scare you off. Take them one by one, on a firm schedule. First day, pick one of these 15 tips, work hard at it all day, meld it into your

routines. Second day, pick another tip, work hard at it all day, meld it into your routines—but, at the same time, keep practicing the skill you learned the first day. Third day, still another tip . . . And so on down the line, tip after tip, day after day, learning (or polishing) one new skill at a time until you've learned (or polished) them all.

Now, for the 15 tips to better management, read on.

1. STUDY YOUR MANAGEMENT JOB

Put your job under the hood lights, so there's no shadow where any part of it can hide. Then look at it from every angle. Analyze it.

What are the job's objectives—long-range and short-range? To cut costs? Improve quality? Upgrade employees? Make work safer? Improve profits? Develop new products? Give stockholders a better break? Modernize production facilities? Diversify the product line?

What are the job's needs—right now and long-range? People? Machines? Money? Leadership? Imagination? Technological updating? Plant relocation? Engineering skills? Personnel-management skills? Refinancing?

Whatever the objectives and needs of your job are, put them all down on paper. Match objectives against needs until a pattern begins to emerge. Set up priorities. Then shape a plan of action that will attack first things first.

But keep your plan of action flexible. And keep it (and your job) constantly under study. The job and its needs can change swiftly and unexpectedly. If that happens, you'll have to move fast, too, adapting your plans to the new demands.

2. APPRAISE YOURSELF

Take a straight, hard look at your own abilities. Your limitations, too. That's the only way to find out what you can do best (maybe it's money management or production scheduling) and where you're weak (maybe in cost accounting or in handling people). Match this inventory of your skills against the objectives and the needs of the job. This way, you'll see where you can do your most effective work—and where you'll need people with other skills to backstop you.

3. WORK WITH YOUR ORGANIZATION

The only purpose of organization is to help people do their work better and thus to speed the company toward its goals. If organization does anything else—if it entangles people in red tape, if it gives them latitude to build up little private empires, if it slows decision-making and action—there's something wrong with it. Or there's something wrong with the way you're using it.

It's important for you to know the pattern of the organization you're in—what functions it covers, who reports to whom, how line and staff are related, where you can go for special jobs and services, and how the whole set-up mirrors your company's policies, procedures, objectives, functions, and methods.

The successful manager uses his organization. What's more, he keeps it always under study and moves quickly to change it when it's time to change. For example, a company that's in the midst of a plant-construction program this year needs a different organization right now from what it will need next year, when the emphasis will be on enlarging and consolidating markets.

A good manager doesn't short-circuit his organization. He gets action (or acts himself) through the chain of command. He communicates—sends and receives information—through the chain of command. He's captain of the team that reports to him. And he's a member of the team that reports still higher up the line of authority. In both roles, as captain and as team member, he relies on the organization as the machinery by which things get done.

4. PICK YOUR STAFF

If you're a good manager, you know where your weak spots are. You seek people who can fill in behind these weak spots of yours, and you fit them into your organization chart where their talents will be best used. You don't put the old sales chief, now near retirement, into a key spot like personnel director just because you've got a new sales chief and there's no other place to put the old codger. He'll be unhappy, your personnel department probably will fly apart at the seams, and you yourself will look bad as a manager.

How can you pick people better? Certain aptitude tests are fine, as far as they go. Sometimes even a letter of reference is helpful. Come right down to it, though, and the best device still is the skillfully conducted personal interview. Nothing else quite takes its place.

Interviewing is a separate skill itself. You can acquire it by study and practice. For the moment, suffice it to say this: To talk meaningfully with a job prospect you must be clear in your own mind about what you're looking for. You must see enough people to make sure you've

sampled the field realistically. You must plan the interview and conduct it so that the prospect learns about you, the company, and the job while you learn about him. You must frame your questions intelligently and provocatively. And you must give the prospect opportunity to ask questions and express himself.

5. DELEGATE

If you've drawn up your organization and staffed it so that every one of your job responsibilities is capably covered, you're in position to act like a real manager. That is, you can start the wheels turning, with all gears smoothly meshed, by delegating things to the people who report to you. What things do you delegate?

First, of course, you delegate work—work that you yourself might do if your organization were smaller or narrower, or if you were on the next lower step on the ladder. A knitting-mill superintendent, for example, probably would delegate supervision of the dyehouse to an assistant superintendent. This way, the assistant superintendent would have freedom to decide many details involved in the dyehouse work—number of man-hours needed to meet production schedules, distribution of overtime, and the like. Delegation would include also such matters as arrangement of office space in the dyehouse, choice of a desk, and selection of a secretary.

Second, you delegate authority—as much authority as is needed to get the delegated work done. The assistant superintendent in charge of the dyehouse, for instance, would need authority to direct his workforce, enforce safety regulations, discipline violators of the work rules, and schedule production. Without such authority his responsibility would be meaningless.

One suggestion: Why not chart all the jobs for which you are responsible, distinguishing between those that you hold and those that you delegate? This way, you and your assistants will be clear about who does what.

6. SET UP CONTROLS

Controls are the sparkplugs of managerial action. They flash warnings when key factors drift away from your expectations — when mill seconds creep upward, when lubrication costs get out of line, when accidents increase, when direct-labor cost per thousand yards moves higher.

Controls, of course, mean paperwork. If you balk at the thought of more paperwork—if you think it may be easier to keep all control facts in your hat—think again. Controls are essential. But they don't have to be com-

HOW DO YOU RATE AS A MANAGER?

Take this simple test, find out for yourself. If you score 100, you're perfect—ought to be president or chairman of the board. From 90 to 95, you're pretty good. From 80 to 85, better get busy on yourself. If your score is 75 or below, you're in real trouble.

For each of the 10 statements below that's TRUE about you . . . score 5 points on the line below

1. **You feel on top of your job. Every morning is a fresh start for you.** _____
2. **You encourage your people to use their initiative, take on new responsibilities.** _____
3. **No reports come to your desk except those that are immediately useful.** _____
4. **Your subordinates discuss their merit ratings freely with you.** _____
5. **You always find some time during the day when you can be quiet and think.** _____
6. **There's not a "Miscellaneous" folder anywhere in your files.** _____
7. **You haven't had a decision reversed any time in the last 12 months.** _____
8. **You keep a written description of your job—objectives, needs, priorities.** _____
9. **Within the last month you've studied your organization chart, matched it against needs.** _____
10. **Last time your assistant was in your office, you listened more than you talked.** _____

For each of the 10 statements below that's FALSE about you . . . score 5 points on the line below

11. **You haven't made a decision all day. Just too busy to sit down and think.** _____
12. **You got a letter this week that began, "We have had no reply to our letter . . ."** _____
13. **You had to write a letter this week saying, "I regret the delay in replying . . ."** _____
14. **You blew your top this week. Young Jones wouldn't do the job your way.** _____
15. **You never admit anything is your fault, even if you are to blame.** _____
16. **This week you had to say, "If only I'd know that I'd have decided differently."** _____
17. **Nearly every day somebody comes in and asks, "Who's responsible for such-and-such?"** _____
18. **Your calendar pad was empty all day. But you went home feeling pushed, frustrated, dog tired.** _____
19. **You haven't read a serious professional book in the last three months.** _____
20. **You sat through the last management committee meeting and never said a word.** _____

plicated. All you have to do is to list the six or eight most critical measurements of accomplishment in your job—labor turnover, or power costs, or delivery-schedule performance, or indirect-labor costs, or loom downtime, or customer returns—and check on them regularly. When you spot a drift in the wrong direction, act. Experience will tell how often to check on these key measurements.

7. SIZE UP YOUR PROBLEMS

Separate the big ones from the little ones. How can you tell them apart? One way is to look at the benefits you'll gain if you solve a given problem. If the benefits are big, go after the problem, give it all you've got. If the gains look small or temporary (for example, just another one-day truce between two foremen who never will get along on good terms), don't waste your time. You'd be taking out after a trifle when there's big game to go after.

8. PLAN AHEAD

The man who's a real pro at managing doesn't dash around putting out fires. He leaves that to the amateur. Nor does he sit around waiting for something to happen—waiting for a crisis to erupt. Not a bit of it. Our man makes things happen—and makes them happen when and where he wants them to happen. In short, he plans.

Planning is a blueprint for action. It's equally essential in short-range and long-range management. It involves setting goals, determining what's needed (people, materials, equipment, utilities, money, time) to reach those goals, settling on ways of providing what's needed, fixing responsibilities up and down the line, setting up a schedule, arranging for controls, and measuring results.

If planning seems complicated, remember one thing: It's easier to plan than to pick up the pieces when something blows up in your face.

Sure, some time you may be ordered into a situation that's got out of hand. You have to handle crisis situations of somebody else's making. If that happens to you, accept the compliment—you know somebody up the line has confidence in your ability. But keep your head, too. Make it your aim, as troubleshooter, to eliminate crisis procedures as quickly as you can and to put operations back on a planned basis. Aim to get things running smoothly—so smoothly that you have no "crash" decisions to make—so smoothly that you can manage by exception rather than by constantly riding herd.

9. COMMUNICATE

Good managers deal most of their cards face up. They don't conceal information that's important to their associates and subordinates. Since they expect teamwork, they treat people like members of the team, who ought to know what's going on. This way, good managers build confidence, avoid suspicion, and strengthen morale.

In communicating, it's all too easy to concentrate on sending and forget all about receiving. The truth is, communication must work both ways. Good managers remember that. They're as good at receiving as they are at sending.

When a good manager sends (by talking or writing), he makes his meaning clear. He decides what he wants to say before he says it. He makes clear whom he's directing his communication to. He states his thoughts in language his receivers understand. He tells everything that needs telling—but no more, lest he confuse his receivers. And he communicates whenever he has something to say—and only then.

As a communication receiver, the successful manager makes a practice of listening regularly to his associates—those he reports to and those who report to him. When he listens this way he's not spying or prying. In fact, the last thing he wants is to be (or listen to) a talebearer. When he listens it's because he needs to be informed—needs to sense opportunities as well as dangers. It's his way of learning about developments that may affect the conduct and results of his job.

10. UPGRADE YOUR DECISION-MAKING

If you think every mill manager (except you) makes decisions like a movie star playing executive, think again. A movie star can be crisp, positive, and swift to come to a clear-cut decision. He doesn't have to delay, puzzle, question, ponder. Mill managers aren't that lucky. They're making real-life decisions. They're playing for keeps. If they seem to delay and ponder and question, it's because they have to. They're doing the best they know.

But can they upgrade their decision-making? The answer is "Yes." And there's a simple formula for doing better. It has five steps. If you put yourself through these five steps when you face decision-making situations, you'll make a better decision every time. Here are the five steps:

Gather the facts. Get all of them. Your bad decisions will come when you act without enough information. Don't let lack of time press you into hasty decisions.

Spot the real problem. Think it through. What shows on the surface may not be the root of the matter. For instance, a complaint about shift scheduling may be, at bottom, a symptom of lack of confidence in a departmental supervisor.

Analyze the problem. Can you break it up into smaller problems, each with its own solution? What are the stumbling blocks to solution? Can you remove them one by one? What gains will you win if you solve the problem?

List several solutions. These will depend on the kinds of obstacle you discover—one solution for each obstacle. These little solutions may lead you to two or three bigger solutions. This way, you'll always have a spare solution in your vest pocket.

Lay down your plan of action. But it's not enough to decide what to do. It's equally important to decide who's to act—and when and how and where.

11. MASTER YOUR DESK

Nothing else will boost your frame of mind like a clean desk. It makes your work look easier to do. It lifts your operating efficiency. It makes you look good to your boss.

What can you do if you're buried under a paper avalanche? You can do three things, as follows:

Shut off, at their source, the papers you don't need. They just clutter up your desk. How many of them are reports you once asked for (say, a daily or weekly report on indirect labor) in connection with a project you once had in mind (say, the purchase of some new bale-handling equipment)? Now that project is dead, or completed, or shelved. Yet the reports keep coming. You can be ruthless about papers like these. Just tell the people who send them to stop.

Put to one side the papers that aren't urgent. Put them somewhere close within reach, so you can lay your hands on them when you get a few quiet moments or so you can pick them up when you start home at the end of the day. Even so, you must get through these papers (reports, magazines, and the like) as quickly as you can. Get them out of your way and, if it's in order, pass them along to your associates.

Act right now on the important papers. They're easy to spot. They're the ones on which you base decisions. Don't cut these off at the source. And don't shelve them. They're on your desk for just one reason—to spur you to action.

12. ORGANIZE YOUR DAY

It's organize—or else! Why? Because every day brings its swarm of tasks, big and little. All day long they buzz around your head. Some of them only distract you. Others sting. Some of them you swat. Others you brush off. Still others are still around at the end of the day. Only way to get through such days without losing your sanity is to plan them.

Can you plan a typical day's work in your job? If you break it down, chances are you'll find it falls into four main categories. Each kind of work is important—and you've got to do it. Each takes time. Here are the categories:

Routine work. This is such work as reading your mail and dictating, checking certain figures on reports that go out from your office or come into it.

Regular work. This is your basic job. It's administrative and supervisory. It involves conversations, conferences, programing, planning, controlling, and reporting.

Special work. This comes to you from a higher echelon. Or it's something you take on voluntarily—like revising your organization chart or changing the layout of your knitting room.

Creative work. This is the work from which your big promotions come. It involves big new ideas, new practices, sweeping changes, big savings, revolutionary new product lines.

Any one of these four kinds of work probably could take all your time if you let it. But the trick of success is to let no one of them take more time than it should. That means you've got to allocate your time. A typical allocation (and one that most managers probably could live with) might look like this: routine work, 15% of the week; regular work, 65%; special work, 15%; creative work, 5%.

With such an allocation as this, you can set up a weekly calendar, with your time scheduled day by day and hour by hour: 2 hours (perhaps 10 to 12 on Friday) for creative work; 6 hours (9 to 11 on Mondays, when mail is heaviest, and 9 to 10 the other four days of the week for routine work; and so on.

Sure, there'll be times when your well-laid schedule seems to fly apart. Don't worry too much if it does. The truth is, you shouldn't expect perfect performance. Your schedule has to "give" to meet special situations. Even so, a schedule will give you something to hew to—will bring order out of some of those chaotic days that put a manager on his mettle.

13. HANDLE PEOPLE LIKE PEOPLE

Assume that others are working with you—not for you. Ask them to help you. Approach them with suggestions rather than commands. Play down your power. Use the soft sell—not the hard nose.

Give credit where credit is due. And recognize achievement openly. People thrive on appreciation and praise and seek ways to earn more of it.

Challenge people. Expect the best from them. Put your confidence in them, give them tasks that stretch their mental muscles—then watch for their response. Most people will exceed your expectations.

Be fair and firm. Don't set up any crown princes. Play no favorites. Treat all alike, holding everybody to the same policies, the same rules. Rate your people by objective standards. Tell them honestly (one by one and in private) where they stand and how they can improve. Listen attentively while they talk.

14. BE CONFIDENT

Don't worry yourself into the doldrums about your shortcomings. Most of them are imaginary anyhow. Instead, count up your strong points and bring them into play on your job. Maybe you don't know all the complex ways to figure return on capital investment. You don't have to keep your mouth shut when some member of your management committee proposes to buy a new line of knitting machines. Bring your own know-how to bear in the discussion. If you know maintenance procedures, for example, you can look good (and be helpful, too) if you throw your knowledge into the mix before the committee comes to a decision.

In other words, don't sell your abilities short. You're probably better than you think you are—and your job is more important than you think it is. On the other hand, vanity and conceit have been the downfall of many an otherwise good manager. There's always opportunity to learn from others. Nobody—not even you—can be an expert on everything.

15. KEEP ON LEARNING

You can improve your management skills several ways. And you'd better, too—because things move with lighting swiftness these days. Technologies change almost overnight, skills get upgraded, equipment gets more automatic, and up-and-coming youngsters find out more and more about the art of managing. Unless you can keep up with the parade, somebody's likely to give you the order to step aside.

What can you do to keep abreast—and ahead? Several things. The following, for example:

Study the savvy managers whom you know. Talk with them. Get to know them well. Try to fathom the reasons for their success.

Read books about management. Good ones are all around these days. Ask your local librarian or bookseller for a recommendation.

Get involved in study courses, seminars, and discussion groups. There are lots of them around—in your own company, in your local high school or college, in the local chapter of your professional society, in correspondence schools.

A good manager must also know . . .

How To Manage Discipline

Here are nine guides that will help you minimize your discipline problems:

1. Make rules that make sense. That's what your employees (and arbitrators, too) look for. If your rules are reasonable, some of your employees may even line up on your side of a dispute.

2. State your rules clearly. Use straightforward language. And don't overlook the penalties—state them just as clearly.

3. Make your rules known. You can't blame your people for not knowing unless you tell them—through handbooks, memos, letters, bulletin boards, and any other means at hand.

4. Look for ways to correct rather than punish. Your job as manager is to get the best you can from your employees. If you can steer misdirected energy into productive channels, you'll be doing your employee—and yourself a good turn.

5. Don't go off half cocked. A discharge handed out in haste can cost big money—a long arbitration, a costly penalty, sometimes the time and money to train someone to replace the man you fired on impulse or in anger.

6. Treat all violators alike. For the same offense (or a similar one) hand out the same (or similar) punishment. Play favorites, play whims—and you're sure to get in trouble.

7. Give the offender a break if you can. Certainly if there's any doubt about what was done or whether he did it, give him the benefit of that doubt. From a practical standpoint, don't press a discipline case unless you've got the evidence you need to nail it down.

8. Measure your man for what he is. Try to understand him—what makes him act the way he does. Maybe he's a social misfit, or thinks everybody is against him, or has troubles at home. Once you understand him, you may be able to help him. And if you can help him, your disciplinary problem may vanish altogether. Play to his strength.

9. Don't play psychiatrist. That's a role for the professional, not for you. Sure, you can suggest that your man see a psychiatrist. But that's as far as you can safely go. Go further, and you'll be misdirecting your energy, dipping in where you have no skill, and entangling yourself in social and emotional complications that are out of your line.

Reprints of this article available at 50¢ per copy; 40¢ each in lots of 20 or more

A large chain of mills made a minor change in its spooler operations, and the results were startling. The change first threw the mill out of balance, but when this problem was cleared up 10 mill units were able to save $4,100 each a year in indirect labor costs.

Spooler Modification Cuts Indirect Labor Cost $41,000

By ALBERT B. MALLARD

IN MANY MILLS, spooler rooms are not operating at maximum efficiency. Often the blame is placed on bad spinning or bad cotton. Some time ago, our mill was having trouble at spooling that the foreman blamed on spinning. Yardage was uneven, cheeses were soft, and end breakage was too high.

We checked our spinning operation and could find nothing unusual. Then we looked at the spoolers themselves. Tailings, starters, and amount of yarn on spinning bobbins appeared to be normal. The machines all seemed to be in good shape. The only thing we could find wrong with the spoolers was worn detectors, which apparently caused the irregular-size packages.

We decided to replace the detectors, but before doing so we thought it would be advisable to test a number of different types and select the one best suited to our needs. Eventually we tried one with longer wires, and it permitted us to put 2,000 to 3,000 yds. more yarn on each cheese. The cheese was harder but not much larger than the old one.

Mill Is Out of Balance

The new detectors did solve our old spooling problems, but at the same time they presented a new one. The extra yardage threw the whole mill out of balance. Spinning could not keep up with spooling, more winding time was needed, piece-rate pay scales were affected, and it looked as though we'd have to completely re-evaluate our operations.

At the time of the change, most departments were running 138 hrs. per week, and we were paying time-and-half for the extra 18 hrs. work. Increased production in certain departments would have meant even more overtime. On the other hand, we didn't want to reduce production at spooling or elsewhere.

Here's how we solved the problem and at the same time saved the company $41,350 a year in indirect labor costs:

In our mill, production operators are paid on a piece-rate basis. Indirect labor, such as roving haulers and fixers, are paid by the hour. All employees benefit from a bonus plan. Machine stoppages over which operators have no control are taken into consideration.

After studying the wage situation, we decided to start up five more spinning frames and cut weekly running time from 138 to 133½ hrs. Work assignments were increased slightly, but spinners continued to earn about the same weekly wages because of the increase in production per manhour. Over-all production remained constant at 140,000 lbs. per week. Immediate result was an indirect labor saving here amounting to a total of $56.20 per week, formerly paid to 10 nonproductive operators.

We next were able to reduce working hours of operation in the spooler room. Here, work assignments are fixed at 130% efficiency and are based on end breaks. If machine stoppage varies appreciably, the jobs have to be re-evaluated.

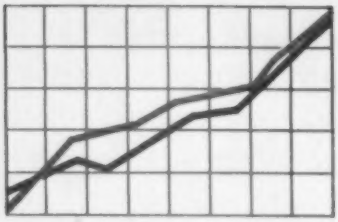
In this instance, the extra 2,000 yds. on the cheese and fewer machine stops balanced out the shorter operating week insofar as the spooler operators' wages were concerned. Again, the real saving was in indirect labor cost.

Labor Cost Is Less

Before we put on the new detectors, the spooler room was producing 139,584 lbs. of yarn per 138-hr. week. After we put on the detectors, we produced the same amount of yarn in 133½ hrs., a saving of 4½ hrs. Indirect labor, which consists of a fixer, a yarn hauler, a creeler, and a tailing-machine girl, was paid a total of $22.48 less per week in this department.

In the slasher room, we reduced the work week from 108 to 104½ hrs. and saved $4.02 in indirect labor cost for one operator. At the same time, we increased production because of the extra yardage on the beams. Warper production also was increased, but there was no indirect labor saving in this department since one man does all the work.

Added up, the savings in indirect labor cost is $82.70 per week, or $4,135 for a 50-week year. Multiply this figure by 10 mills in the chain, and we are saving $41,350 per year—all because we put new detectors on our spoolers.



By RICHARD B. PRESSLEY,
Senior Associate Editor, TEXTILE WORLD

Knitting Hits New Peak In Production and Sales

Good business in knitting is not caused by good general textile business alone. A new type of knitter is commanding sales and increasing production by constant sales promotion and by increasing the production potential of his plant. Here's how knitters are reaching a new peak in 1960.

IN 1960, knitting mills will set new production and sales records following their best year to date in 1959. Good knitting business is following the present pattern of good textile business as a whole but—more important—knitting mills are expanding their markets by creative styling, advertising, and better merchandising practices.

Take men's and children's hosiery, for example. A couple of years ago, the market for men's stretch socks was saturated. All socks looked pretty much alike, and they lasted indefinitely. So it looked like curtains for these knitting mills.

Now these same mills cannot fill their backlogs of orders. High-bulk-yarn socks, new fiber blends, circular sutures in a host of new patterns, and crew socks, all in coarser gauges, have changed the buying habits of consumers.

So with spring patterns, fall patterns, and in-between seasons, men and children are following women's buying habits, with the result that knitting manufacturers have a constant market.

Underwear Reaches a New Peak

Likewise, production of cotton and wool knitted underwear and nightwear is at the all-time peak. In the second and third quarters of 1959, production increased at the fast clip of 24% and 48% over the first quarter. When final figures are in, dollar shipments for the year will likely reach $½-billion. This figure compares with over-all sales of slightly under $400-million in 1958, for a gain of 25% in 1959.

Knitwear's command of the nightwear market is graphically illustrated in women's knitted nightgowns, which are presently 48% of the over-all market. The other 52% is still held by woven fabrics. Only six years ago, knitted fabrics were only 30% of this market.

Fibers being used in knitted fabrics are changing rapidly, with man-made fibers becoming more important. All-cotton and all-wool fabrics are just barely holding steady in over-all use. Nylon is dropping slightly. Cotton mixtures and blends and woolen mixtures and blends were both taking a beating until recently, with a drop of 7% and 20% respectively in 1958. Man-made fibers in general gained 34%, and man-made fiber mixtures and blends jumped 6% this same year.

The most spectacular jump in the use of man-made fibers came in underwear and nightwear fabrics in 1958, the last full year's figures available at this writing. Nylon increased in use by 3%, rayon 17%, and other fibers 147%.

Man-made fibers scored substantial gains in outerwear fabrics, too. Rayon increased 75%, other fibers increased 42%, while nylon took a loss of 26%.

However, cottons and wools cannot be completely brushed aside.

Cotton was helped by the same types of chemical treatment given to woven goods for wrinkle resistance. Results in home laundering of cotton knitted dresses and nightwear are said to be even better than from woven goods. These chemical stabilizers also prevent excessive shrinkage and stretching.

By late fall of 1959, demand for wool knitting yarns

became so great that spinners were operating at full capacity to fill orders. This comeback is readily apparent in wool sweaters in high-bulk styles.

But man-made fibers also scored with this upsurge in knitted sweaters and jackets. Sales of these two garments in 1959 were 100% above shipments of six years ago.

These gains have come from creative styling and a greater range of colors. Styles range from flat knits to bulky ribs in pullovers and cardigans with zippers, liberally sprinkled with conservative campus wear. Like men's and children's socks, this sales increase came from aggressive promotion.

Here's what's to come this fall in sweaters. Bulk sweaters will again dominate the market. Over-all sweater sales will be more than 10% over fall of '58. Prices will hold steady. Cardigans and V-neck pullovers will sell well, with pullovers in greater demand. Fibers will be wool, man-made fiber blends, and lambs' wool in blends with man-made fibers. Patterns will be predominately in solid colors and solid colors with two- and three-tone trims.

Textured yarns in 6- and 10-den. spun acrylics and filament acrylics to create a luxurious hand will be important again as in 1959.

Outerwear Sales Reach New Record

Knitted outerwear shirts made by underwear manufacturers were also up in sales in 1959. Shipments in 1959 were over 5½-million dozen; in 1958 they were only 4¾-million dozen.

This sharp gain in sales was at the expense of woven shirts, which registered no gain during the first six months of 1959 compared with the same period in 1958. In contrast, men's woven dress shirts gained 22% during this same period. The knitted sports shirts sell at up to $10 each and above and include all natural and man-made fibers.

The outlook for outerwear fabrics in general is certainly bright. These fabrics are becoming more competitive to woven fabrics in women's apparel. Jersey fabrics, specifically in double-jersey and interlock constructions, are becoming very popular.

Continued sales increases will come from three factors: (1) the new and widespread interest in active and spectator sports, (2) the growing trend toward surburban living, and (3) the increasing population.

Knitted Swimwear Brings New Glamour

Knitted swimwear accounts for only about 15% of over-all swimsuit sales, but a strong fashion position has been forming the past several years. Fashion-magazine advertising has made knitted swimwear a high-fashion and glamorous garment.

The former elastic yarns used in swimsuits were difficult to handle with regular production machinery in garment making. But development of new yarns, new knitting methods, and new knitting machines have eliminated much of this difficulty.

Now lightweight fabrics are being made from wool and textured stretch yarns in a wide variety of styles in both printed and plain patterns.

Women's hosiery sales increased 25% in 1959 over 1958. Seamless stockings increased just a shade over 30%, but full-fashioned dropped a little over 5%.

This sales pattern follows the established pattern of seamless hosiery's gain on full-fashioned every year for the past 10 years. In 1950, seamless accounted for only 12½% of the full-length stocking market. At the end of 1959, with the record not fully complete for the year, seamless had jumped spectacularly to only a shade under one-half of this total market.

During 1959, several full-fashioned mills went out of business. Other full-fashioned machines now lie idle in mills that are expanding seamless production. These manufacturers, for the moment at least, are resigned to the idea that teenagers, who make the growing market, have a yen for seamless and not full-fashioned hosiery.

Sparkling nylons have awakened considerable interest, and they sold well during the past Christmas season. The gold and gray shades made of two ends of 15-den. nylon offered completely new features. Glamour packaging is important to sales, and goods move better at a high price than at a moderate one.

In both types of women's hosiery, branded names are doing best in sales. At a season's end, branded stockings hold firm and unbranded names often have to take a small price cut that runs up to 25¢ a dozen.

A New Type of Knitter Is Born

A young, alert, and aggressive type of knitting-mill owner has moved in to manage knitting mills recently. Unlike the men they succeeded, these men aren't content to sit still and count their profits.

Instead, they are buying newer, faster, and more-versatile machinery. They're expanding production in older mills by building additions. Or they're building completely new plants.

As a result, present good profits insure future company earnings and jobs for workers.

And unlike other phases of textile manufacturing, knitting mills are still located heavily in the East. Knitted underwear and nightwear manufacturers, for example, are in the following areas: Mid-Atlantic States 37%, New England 11%, South 40%, and all other states 12%.

These Eastern mills are paying higher wages than mills in the South. And since there's little moving of knitting mills to the South, they are apparently strong financially.

Few Big Business Deals Are Made

Knitting mills are also holding the line generally against consolidating with other larger mills.

This trend was broken in one instance late in '59 when Burlington Industries, Inc., acquired Princeton Knitting Mills, Inc. Princeton is outstanding in its production of high-pile knitted fabrics.

Another important business deal, made early in '60, was an agreement between P. H. Hanes Knitting Co. and Adams-Millis Corp. to market men's, women's, and children's socks under a common sales agency, Hanes-Millis Sales Corp.

Another important sales and manufacturing organization is looking for a chance to gain control of a large manufacturer of men's and boys' hosiery.

With most American knitting-machine manufacturers booked well ahead on deliveries, one English hosiery-machine manufacturer is making extensive machinery in-

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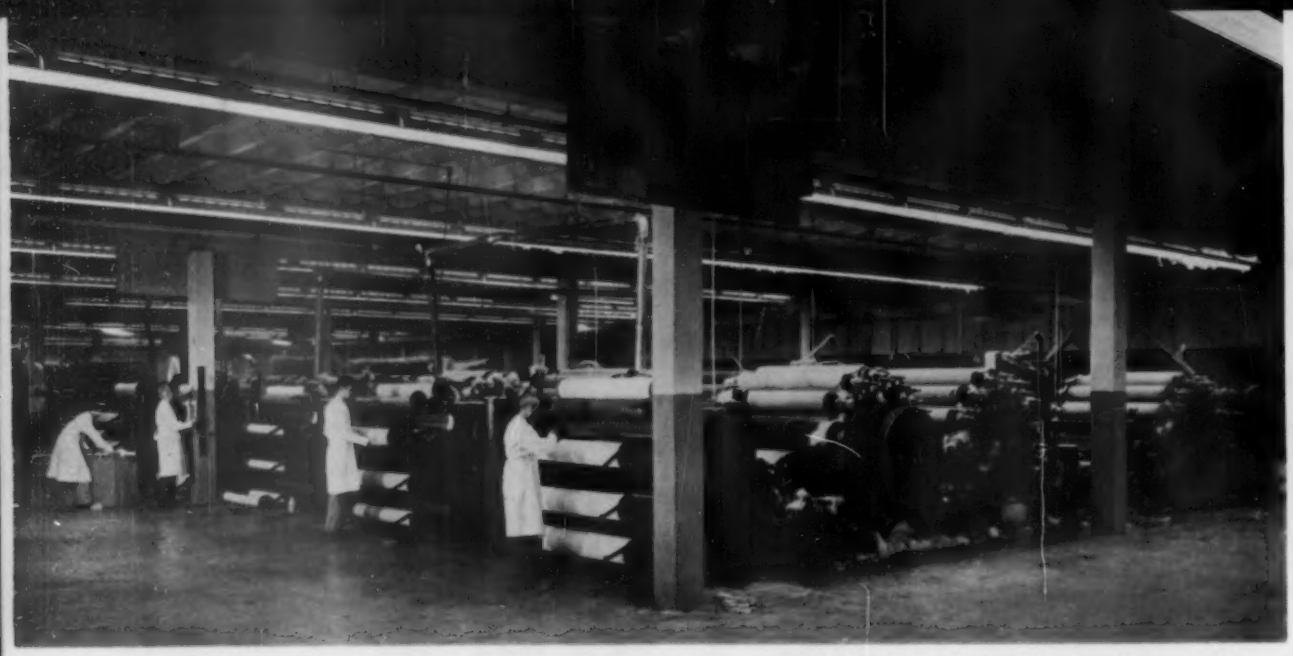


THIRTEEN SETS of woolen cards receive stock from the blending room through conveyor pipes. Production is 50,000 to 60,000 lbs. per week.

Newest Knitting Mill Is

• America's newest knitting mill has just been completed in the East, a section being evacuated by most textile manufacturers. Here's how this modern mill is built and equipped and how the owners are planning for future profits.

A BRAND-NEW $2-MILLION COMPLETELY INTEGRATED YARN AND KNITTING MILL has just been completed by Seneca Knitting Mills Co., Inc., Seneca Falls, N. Y. This new building replaces the old building that was totally destroyed by fire in January, 1959.

And with the new building, Seneca has increased production capacity and expanded its products in several new lines of men's, women's, and boys' socks. Newer faster automatic knitting machines replaced the older machines. The best measure of increased production is the 13 sets of woolen cards in the new mill that replaced seven sets in the old mill.

BRAND-NEW MILL and equipment costing approximately $2-million gives Seneca Knitting Mills the newest mill in the East.

Seneca's new building is the last word in building-construction methods and U-flow layout. New production machines, equipment, and packaging equipment were installed.

Quality Control Expands Fibers

An important part of the new mill is a quality-control department. This department is headed by a superintendent, Arch F. Moses, who has a full-time staff constantly checking the quality of raw fibers and goods in manufacturing all the way through to shipping. With this new department, Seneca has been able further to increase the number of man-made-fiber blends knitted and to improve the natural yarns used.

Seneca's present owners, Francis J. and George G. Souhan, bought the old mill in 1954, when its owners shut it down and moved South looking for greener pastures. Under the

SPINNING FRAMES are of two types: 18 ring frames and three mule frames. Mule frames are used for socks that require a lofty hand.

KNITTING ROOM has plenty of space for storage, as have all production departments. Fluorescent lamps are placed wherever they give best light.

Built in the East

Souhan management, with Francis as chairman of the board and George as president, the mill was reopened in June of 1954 and has grown steadily since. The mill now has over 300 employees and operates three shifts.

This is the Souhans' first venture in knitting; but they have successfully operated the Geb & Souhan Yarn Co., also in Seneca Falls, for many years as manufacturers of fine knitting yarns.

A third management man is also partly responsible for Seneca's new mill. Roy E. Jones, advisor to the board, is one of the original founders of the company, which dates back to 1921.

Seneca has a record of having increased production every year since its founding, even during the shutdown. Production was increased substantially during the depression years of the early '30s. Only one year, 1938, was not very good production-wise.

Why Did Seneca Rebuild?

A TEXTILE WORLD editor asked Francis Souhan: "Why were you willing to plunk down $2-million for a new knitting mill in an area being abandoned by other textile manufacturers?"

Here's Mr. Souhan's answer: "Employees in our old plant were highly skilled. Comparatively, the wage-differential advantage in the South isn't so great. And as the quality of our knitted products continually becomes higher, the wage differential is of less importance.

"Our U-flow layout in our new mill is very efficient and has cut time loss of materials in transport to a minimum, and goods require little handling.

"The layout has also cut supervision to a minimum. At one glance, a supervisor in any department can see the raw material coming into his department and the finished yarn or hosiery going out.

"From this building, we are only 300 miles from one-half of our customers and we can reach this market within 24 hrs. Socks finished in the afternoon reach New York City by truck overnight.

"We have an adequate supply of city water and are only 150 ft. from a large canal for additional water if we need it. Our new zeolite water-softener system insures plenty of pure water for processing goods.

"Sales are now handled directly from the mill by George Souhan and two vice presidents, John C. Watkins and William T. Hughes. With this setup, each salesman can follow up his accounts at the mill for better service."

What Did $2-Million Buy?

Seneca's $2-million expenditure was half for the mill building and half for machinery. There's a sewerage-disposal system and a secondary water supply for the sprinkler system.

The new building is just outside the city limits of Seneca Falls and is on a 490-acre plot. Building time from grading to beginning of production was five months.

The building is rectangular and is 320 ft. wide and 340 ft. long. Additional area for offices is at the front corner of one of the 340-ft.-wide sides.

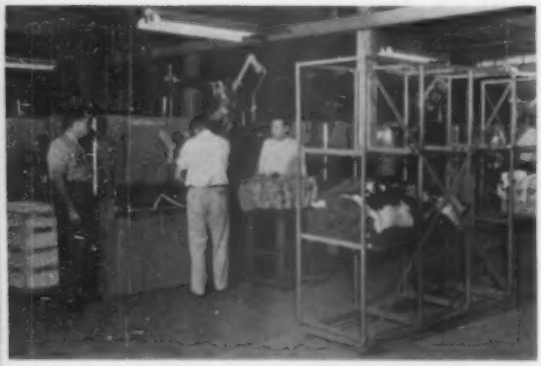
A little over one-half the floor area is used for yarn manufacturing and storage. Knitting production requires a little less than half the space. The maintenance department, lunch room, and other employee service rooms are near the center of the building, which is divided by a double fire wall.

Plant and machine layout are for perfect U-flow. Fibers enter the building from a truck dock, and finished socks leave the building from the

CONTINUED ON PAGE 140

PRESIDENT JOHN SLANE and General Superintendent Curtis Grady check a circular-suture pattern on one of the 132 new CK-A knitting machines.

SEAMING MACHINES will replace looping machines, and the over-all number of machines and floor space will be cut by approximately one-half.



AUTOMATIC BOARDING is replacing conventional-boarding operations. This truck holds a two-shift supply of hosiery to be boarded.

New Machines Expand Slane To A Giant Hosiery Mill

With two young men at the management helm, Slane Hosiery Mills, already a well established organization, is being expanded into a giant production unit. Expansions completed this year are—

- *A 60,000-sq.-ft. addition*
- *132 new knitting machines*
- *New seaming machines to eliminate looping*
- *New automatic boarders*

TRIMMING OPERATION is one of Slane's in-plant research projects. Machine cuts tails from decoration yarns and removes them by vacuum.

A MILL ADDITION AND A MACHINERY INSTALLATION that cost almost $1 million, both just completed, put Slane Hosiery Mills, Inc., High Point, N. C., in position to fill its large backlog of orders. Slane is one of the biggest producers of men's and boys' fancy hosiery. Slane's goal is to produce hosiery that's well made, well styled, and moderately priced.

Slane was started in 1915 with 40 knitting machines. Willis H. Slane, Sr., the founder, sold his machine shop and foundry to start the business.

Slane's constant expansion since 1915 culminated early this year when it bought an adjoining furniture plant. This 60,000-sq.-ft. area is giving Slane floor space to realign and mechanize its inspecting, packaging, and shipping. And finishing machinery will be regrouped and greatly mechanized soon. Storage facilities are also being improved.

Young Men Give Management Spark

John C. Slane and Willis H. Slane, Jr., succeeded their father in operating the mill in 1954. John is president, and his prime interest is in manufacturing; Willis is secretary, and his major interest is in sales.

One of Slane's proudest achievements is its installation of 132 Reading CK-A knitting machines which are giving excellent results in production and hosiery styling.

Recent Slane developments brought about by in-plant research and actual work in an adjoining machine shop also owned by the company are: an electronic preboarder, an automatic one-pair boxing machine, an automatic transfer machine, clipping and turning devices, and a conveyor system for moving cartons to the loading platform.

Slane is very active in both machine and fabric research. Most knitting machines have new attachments that expand pattern possibilities and improve running qualities. A recent fabric development is its heather yarns, an Orlon-viscose blend, that Slane produced with the joint efforts of a fiber manufacturer and a yarn producer.

Styling Provides Buying Incentive

The 65 to 70 hosiery patterns that make up Slane's line for both spring and fall are a continuous selective process aimed at presenting the most desirable combinations of pattern, color, and fiber.

Approximately three times this number of patterns are actually knitted before final selections are made. But around 500 styles are graphed, and several times that many are sketched. Slane's production at this date is roughly 60% men's and 40% boys' socks.

Boys' crew socks are a big seller at the moment. One such pattern is an 84-needle Orlon-rubber top with blazer stripes in the top; sock body is a 12/2 blend of 50% high-bulk Orlon, 40% viscose, and 10% spun nylon; decorative yarn is 12/2 vat-dyed, washfast, combed cotton. There are 13 colors.

A pattern in boys' stretch socks is 144-needle body of 70/2 stretch nylon; decoration yarn is 18s combed cotton.

A men's pattern in 84-needle spiral decoration is a blend of 8/2 50% high-bulk Orlon, 40% viscose, and 10% spun nylon; decorative yarn is 12/2 combed cotton. There are eight colors.

A men's stretch pattern is a 160-needle color-in-color wraps. Yarn is 70/2 stretch nylon; decorative yarn is 150/2 acetate. There are nine colors.

A popular argyle pattern made on CK-A machines is a men's 84-needle bulky knit of 8/2 vat-dyed combed cotton in eight colors with nylon-reinforced heel and toe.

Slane's marketing concept is founded on a five-point cycle: (1) finding out what the consumer wants, (2) producing high-quality socks to meet these desires, (3) eye-catching packaging, (4) merchandising these products through constant magazine advertising and sales promotion, and (5) establishing major distribution and retail outlets to get socks to the consumer quickly.

The 36 distributing points and four sales offices in the U. S. bring the latest Slane styles to consumers while they're still new.

New Machines Installed

Slane's fabric development has been made possible by its research program that brings newer and better machines into the mill. Its newest investment in knitting machines is well over $\$1/2$-million.

Older flexible machines in the modern knitting room are Scott & Williams' model H, KG, and HH 25-step spirals, and PW color-in-color machines; Keller model D (Georgia Komets) with two drums and color-and-color patterns that simulate jacquards; and Crawford AA-2 argyle knitters with 108 needles, and 84 needles for plain argyle.

One model machine is being rebuilt at present. Machine drums will be three. All machines will run 190 rpm. with 84, 108, 132, 144, 160, or 176 needles.

A second model, a group of Banner machines, being changed at present from 160 needles to 108 needles for higher-price socks, is also being speeded up so that production is about doubled.

More and Better Styles Are Made

Slane is shooting the works in its installation of 132 CK-A machines. With present styles running heavy in circular sutures, John Slane says: "We are getting particularly good results with these versatile-pattern machines in argyles, overplaids, and diverse inlaid patterns. Straight-edge color separation is especially good."

All 132 machines have 3¾-in. cylinders; 60 machines have 84 needles, and 72 have 112 needles. All machines run 175 rpm. On plain patterns, one knitter runs 15 machines; but this assignment is increased on intricate and slower patterns. With knitters and fixers not yet completely familiar with the machines, production efficiency averages 89%.

The oldest and most advanced fixers are presently being trained in pattern making in evening classes. They design patterns from lamp shades, neckties, or any design that appeals to their fancy.

The CK-A machines are in an attractively rebuilt knitting room. A new maple floor is cleaned and polished every three months. New fluorescent lighting fixtures provide an average of 76 ft.-cs. of illumination.

New Seaming Eliminates Looping

A second very important machinery change being made at Slane at present is its replacement of looping with the Adams-Millis Ledwell-Getaz seaming method [TEXTILE WORLD, Jan. '60, p. 138] in combination with

CONTINUED ON PAGE 144

Mill Check-Up—3

The Superintendent Inspects Picker-Room Operations

The third place of the busy superintendent's daily inspection takes him on a tour of the picker room. Here he gets a quick picture of what's going on by checking—

- **Lap appearance and variation**
- **Calendar section and loggerheads**
- **Evener motion and beaters**
- **Fan and beater speeds**

By A. L. LANDAU

THE SUPERINTENDENT, having inspected the opening-room feeders and cleaning lines and found them to be operating normally, is ready to visit the picker room. The pickers will be his third stop, and this inspection should not take long because he clearly understands where to look for trouble.

He goes directly to the delivery end of the pickers rather than to the back for his initial look. This move saves time, for the appearance of the lap shows to a great extent if the picker is operating correctly in opening and cleaning the stock. But appearance does not tell whether or not the laps are even.

Lap Weights Are Checked

The clues to evenness are evident, however, and the superintendent watches several laps as they are being weighed. Then he picks up the checklist that shows the weight of each lap made during each shift. He notices how many laps have been rejected because they were not within the standard tolerances of lap weight.

He pays particular attention to trends in lap weights to see if individual pickers are showing signs of making laps that are either heavy or light. He depends upon the operators and the quality-control crew, who run a representative number of laps through the lap meter during each shift, to spot and report any unevenness or variation in the yard-to-yard weight. He knows that they will not permit the maximum variation to exceed ¾ oz.

The selvages of the laps are then closely observed by the superintendent, who is looking for laps with thin, ragged, or scalloped edges. The width of the lap should not vary more than ½ in. in any given yard. When this variation is greater, or if the selvages are ragged, he looks for the causes. These causes can be masses of dust, fly, and dirt between the calender cheeks and the calender rolls, along the edges of the beater box, or in the space between the leather seal and the cages.

Smears of grease or oil inside the machine at any point along the passageway of the stock tend to gather clumps of hard, sticky cotton. These obstructions interfere with the free and even passage of the stock and show up as irregularities in the edges of the lap. Torn selvages can often be directly traced to calendar cheeks damaged by careless and rough handling of the lap pin by the picker tender.

The superintendent next looks at a couple of doffed laps to see if they are properly calendered. He unrolls the lap for a short distance to see if the sheet unrolls cleanly and without splitting. Split laps do not feed into the card evenly, and the sliver reflects this unevenness.

If the weight and pressure on the calender rolls do not appear to be correct, they are tested. Insufficient weight does not take full advantage of the natural tendency of the fibers to interlock into a sheet that resists clinging to the adjacent wrap of the lap. Too much weight may cause felting, which often shows up as neps in the card sliver.

Loggerheads Should Not Jump

While at the calender section, he carefully watches the movement of the loggerheads. These members exert pressure on the lap pin and are controlled by the pressure system of the calender section. The objective here is to maintain, as evenly as possible, a continuous and predetermined pressure throughout the building of the lap.

The old system, still in use in many mills, was to use a brake drum and a leather-faced brake. The modern method is to use an air cylinder and piston. The air control provides a constant pressure, whereas the drum-and-brake assembly releases and builds up pressures so that the weighting on the lap pin is always varying.

If the brake and drum are used, then the leather of the brake should be checked where the loggerheads are jumping excessively. With the pneumatic control, a similar jumping mo-

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Textile World

CHEMICAL TREATMENT AND FINISHING

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DYEING & FINISHING	**Reactivity—A New Concept in Chemical Treatment.** The reactive dyes have ushered in a new era in the chemical treatment of textiles. Chemistry of the various types of reactive dyes. How the principle of reactivity is being extended to such finishing processes as water-repellency and mothproofing	75
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For more satisfactory carpet shades, the man to see is at Sandoz

Whether your carpet is wool, cotton, or nylon, Sandoz dyes and dyeing formulas can help you offer improved color fastness and levelness. Recent improvements credited to Sandoz technology include the dyeing of wool at the iso-electric point (using Lanasyn dyes and Lyogen SMK) and the barre-free dyeing of filament nylon with Lyogen P and Lyogen SF. For your cotton products, Sandoz provides the fastest-to-light directs (Lumicrease colors) as well as a full line of vat dyes. Sandoz can offer you shade matches completely compatible with ali types of carpet backing.

For details and particulars, write, wire or 'phone headquarters: SANDOZ, INC., New York 13; Charlotte 5, N. C.; Cincinnati 26; Hudson, Mass.; Los Angeles 13; Philadelphia 34.

SANDOZ

THINKS AHEAD WITH TEXTILES

SANDOZ

SURDD Spurs Wash-and-Wear Research—

Lowell Technological Institute Research Foundation workers will tackle the problem of improved crease-resistance and other wash-and-wear properties of cotton fabrics under a contract with the U. S. Dept. of Agriculture.

Supervision of the work will be supplied by USDA's Southern Utilization Research and Development Div. under John C. Frick, Jr., of the Cotton Chemical Laboratory. Dr. Emery I. Valko will have charge of the work at Lowell.

Workers will try to improve existing finishes of this type by developing methods and materials that have less effect on fabric strength and even better after-laundering appearance.

New Antistatic Water Repellents—

Reports from Czechoslovakia reveal three new antistatic water repellents that are particularly suitable for man-made-fiber fabrics based on polyamide, polyester, or acrylic fibers.

In one formulation, goods are soaked in a 5 to 100 grams-per-liter solution of a product made by heating one mole of stearic acid with two moles of chromic chloride in alcohol. The treated fabric is extracted to retain 40 to 100% of its weight of the solution, and then dried at 80 to 150° C.

A softer effect is produced on knitted fabrics by substituting oleic acid for stearic acid in the manufacture of the antistatic water-repellent material.

A third variation uses 50 to 100 grams per liter of a 30% solution of the chromium complex described above, plus 0.5 to 20 grams per liter of hexamethylenetetramine to stabilize pH at 4 to 5. Extraction and drying steps are the same as for the first procedure.

Bias Curl Is Key to Crease Resistance—

The inherent tendency of a fabric to curl along a bias rather than warpwise or fillingwise is an important factor in the ability of that fabric to retain a good over-all appearance in use and to resist wrinkling.

Speaking before the Quebec Section, CATCC, last month, Norman J. Abbott, Senior Research Associate, Fabric Research Laboratories, Dedham, Mass., told listeners that if there is a strong tendency for a fabric to curl along a bias it will be more difficult to produce a good wash-and-wear finish on that fabric.

Residual yarn torque appears to be the primary cause of bias curling, Abbott continued, and ways of eliminating it are now the subject of research by textile engineers and physicists.

Cyanoethylation Studies Continued—

By carrying the cyanoethylation of cotton to up to two-thirds of the maximum substitution possible, Southern Regional Research Laboratory workers have found that important changes had occurred in fiber structure, density, and other physical properties. For example, the inner crystalline cellulose of the cotton fiber was shown to be changed to amorphous cyanoethyl cellulose at the two-thirds substitution level.

The newly formed cyanoethyl cellulose can be crystallized in a new form by heating the treated fiber to about 175° C. The recrystallized fiber possesses increased tensile strength and reduced extensibility.

As substitution of OH groups increases, fiber density decreases, and mechanical changes vary with conditions under which substitution goes on. Certain degrees of substitution, with or without tension, during treatment produced improved tensile strength, tenacity, toughness, and elastic recovery.

The experimental results were reported by Carl M. Conrad and David J. Stanonis of SRRL to the Fiber Society last month.

Chloral Hydrate Controls Chlorite Baths–

Chloral hydrate, the quieting ingredient in the Mickey Finn cocktail, has found a new use as a controlling-activating ingredient in chlorite bleaching baths.

The advantages of chloral hydrate as an activator includes the facts that it restrains liberation of ClO_2 gas at low temperatures and does not itself consume any of the bleaching component. The bath can be activated by raising the temperature to 75° C. or thereabouts.

A typical bleaching liquor would consist of 10 grams per liter $NaClO_2$ 1 gram per liter chloral hydrate, and 0.5 gram per liter of 35% H_2O_2 (to stabilize the bath still further). Initial pH is 7.5, which will drop to about 5 at the boil.

Bleaching is carried out near the boil, and during the process the chloral hydrate hydrolyzes to form chloroform and formic acid. Ventilation is obviously necessary, but the chloral hydrate keeps metal corrosion to a minimum.

New Carriers Are More Efficient–

Aromatic esters of benzoic acid are the bases of dye carriers developed by Farbwerke Hoechst A.G. Among the best so far developed are the benzyl, 2-naphthyl, and phenyl benzoates.

The carriers are used in the form of an emulsion that is prepared by dissolving the benzoate in an organic solvent such as tetra- or decahydronaphthalene. A dispersing agent based on the condensation product of ethylene oxide and dodecyl phenol is added to the benzoate solution, and the mixture is then dilutable with water.

The carriers can be used for either dyeing or printing polyester materials. The carriers are patented under British Patent 824,269.

Phenolic Carriers Now In Powder Form–

Dye carriers based on orthophenylphenol and paraphenylphenol can be made in the form of a readily dispersible powder.

The phenylphenol mixture is milled with an anionic dispersing agent and water. Steam is passed through the mixture to remove part of the water, and milling is continued until a dry powder is obtained.

The powder is heated to complete the reaction and is then finely ground to a uniform particle size. U.S. Patent 2,926,987 to General Aniline & Film Corp. gives more details.

H_2O_2 Plus Steam Cuts Amine Odor–

Wash-and-wear finishes that are padded in an alkaline hydrogen peroxide solution and then steamed and washed will not develop amine odors, according to Bernard K. Easton, Food Machinery & Chemical Corp.

A solution of H_2O_2 and soda ash is applied to the resin-finished goods after they have been cured, and then the goods may be steamed in the open width in a dye range steamer or led into a closed scray for a one-minute retention period.

The best padding temperature appears to be about 140 to 150° F. at a pickup of 100%. Wet steam at 208° F. gives satisfactory results in the steamer.

Rough Fiber Surface Cuts Yarn Slippage–

By applying a dispersion of polyamide powder to polyamide fibers, a rough surface is obtained that markedly reduces fraying of fabrics made from polyamide yarns.

Older methods that were based on silicic acid have the disadvantage of dusting off after application, and resins are often unsuitable because they stiffen the fabric.

A Swiss development (British Patent 821,266) uses polyamide powder dispersed in a polyvinyl

acetate emulsion to provide surface roughness that is durable.

Particle size of the powder should be less than 1/10 of fiber diameter, and from 4 to 5% of the powder, based on yarn weight, is deposited on the yarn. The coefficient of friction of treated yarn is about three times that of regular polyamide-fiber yarns.

Newest Reactive Dyes Have Old Source—

The group of reactive dyes just announced by Cassella Farbwerke A.G. is actually based on dyes developed many years ago as acid wool dyes. Recently it was discovered that a series of azo-, nitro-, and anthraquinone wool dyes that carry at least one reactive sulfofluoride group (—SO_2F) would combine with cellulose under alkaline dyeing conditions.

Azo dyes that contain a pyrazolone coupling component are especially suitable for chemical combination with cellulosic fibers.

The dyes can be applied by dyeing and printing methods that include a steaming treatment to get full color value. The new series of dyes is generally very fast to light and can be discharged to a pure white by discharge-printing methods.

Pretreatment Improves Wash-and-Wear—

Cotton goods that have been pretreated with a lubricant and a durable water-repellant can be treated with resins of high formaldehyde content to give better wash-and-wear characteristics.

The process, developed by Tootal Broadhurst Lee Co., Ltd., includes treatment with a product containing an amide group such as Sapamine WP, followed by a treatment with a pyridinium-based water-repellent, such as Zelan.

Then the goods are impregnated with a urea-formaldehyde resin in which the formaldehyde-urea ratio may be as high as 3 to 1. Excellent crease resistance with very little accompanying loss in strength is claimed for the process.

Did You Know . . .

. . . that you can get good antistatic properties on acrylic fibers by treating them with hydrogen peroxide? A typical procedure is to treat acrylic fabrics in a 100 to 1 bath that contains 27% H_2O_2 and 0.73% NaOH for 2 hrs. at up to 100° C. The goods are then washed and dried.

The electrical resistivity of treated fabrics is only 2.5×10^{12} ohms compared to a resistivity exceeding 10^{14} ohms for the original fabric. Strength and extensibility of the fiber are unimpaired by the treatment. British Patent 824,125 to British Nylon Spinners Ltd., gives details.

•

. . . that nylon can be used to make permanent trouser-leg creases in woolen fabrics? The trick is done by applying a monofilament of a polyhexamethylene-alpha-ethyl adipamide nylon to the inside of the crease. This particular nylon has a low melting point, and the pressing iron fuses the material into the wool fabric. A final right-side-out pressing finishes the job.

•

. . . that true dyes can now be affixed to glass fiber? U. S. Patent 2,919,173, assigned to J. P. Stevens & Co., Inc., describes how it's done. The fiber is treated with an amide of aminoalkyl trialkaylsilane and an aromatic carboxylic acid in a water solution and dried. During the drying, the amide reacts with the glass fiber. Subsequent treatment with a diazonium salt forms the dye *in situ* to produce fast colors that are resistant to laundering.

NEW DYES AND CHEMICALS

SB Latex

Dylex K-40 . . . is a styrene-butadiene latex that does not require vulcanization and produces an unusually soft hand in rug-backing operations. The product is particularly suitable as a carpet backing where paper scrim is applied.

The latex is available only with an added antioxidant, and is reported to retain flexibility under extreme ageing tests in the laboratory. Plastics Div., Koppers Co., Inc., Pittsburgh 19, Pa. **(Circle D-1 on Reader-Service Card)**

Fire Retardant

Flamort U . . . is recommended as a tested and approved flameproofing material for use on acetate, nylon, rayon, cotton, and blends of these fibers.

The product is particularly effective on acetate fibers and results meet requirements and specifications of the National Fire Protection Association and A.S.T.M.D. 626-41T.

Goods may be treated by immersion or spraying, and there is no effect on shade or tensile strength. Flamort Chemical Co., 746 Natoma St., San Francisco 3, Calif. **(Circle D-2 on Reader-Service Card)**

Aftertreated Dye

Cuprofix Gray C-BL p.a.f. . . . produces neutral gray tones that are easily shaded with other dyes in the Cuprofix range. After-treatment with Cuprofix 52 or copper sulfate yields shades that have good fastness to light and washing. Sandoz, Inc., 61-63 Van Dam St., New York 13, N. Y. **(Circle D-3 on Reader-Service Card)**

Neutral Wool Dyes

Calcofast Neutral Yellow R . . . produces bright pure yellow shades on wool or nylon, and leaves acetate, triacetate, cotton, Dacron, rayon, and Orlon white.

Calcofast Neutral Red G . . . has generally good over-all fastness on wool or nylon, and leaves acetate, triacetate, and Orlon 42 virtually unstained. Dacron and cotton are lightly tinted, but many cross-dyed effects are possible.

Calcofast Neutral Bordeaux 2B . . . has a useful bluish-red shade that builds up well into wines and garnets on wool, silk, and nylon. Fastness properties are good on wool and excellent on nylon. Reserve on triacetate or viscose is good; cross dyes are possible on blends of wool or nylon with acetate, cotton, Dacron, Dynel, or Orlon 42. American Cyanamid Co., 30 Rockefeller Plaza, New York 20, N. Y. **(Circle D-4 on Reader-Service Card)**

Leveling Agent

Calco Leveling Salt LV . . . aids the production of deeper, level, and solidly dyed shades on wool and/or nylon stock, yarns, or fabrics.

The agent is applied with the dye under normal processing conditions for neutral-dyeing colors, and produces level dyeings without any retarding action.

Barré effects on nylon carpeting are eliminated by use of the product, which is also expected to help in dyeing other nylon fabrics. American Cyanamid Co., 30 Rockefeller Plaza, New York 20, N. Y. **(Circle D-5 on Reader-Service Card)**

Pigment Color

Red B . . . produces prints of a true carmine shade or, at reduced intensity, bright shades of pink. The pigment is available in both the Hiltone and Seabond printing systems. Hiltone is a water-in-oil system; Seabond is an oil-in-water system. Hilton-Davis Chemical Co. Div., Sterling Drug Co., Cincinnati, Ohio. **(Circle D-6 on Reader-Service Card)**

Fast-Color Base

Hiltonil Scarlet 2BS . . . is offered as an easily diazotizable base that has been purified to produce clean diazo solutions that are free from objectionable tars. The base is the sulfate of Fast Scarlet 2G Base, and is marketed in a dispersible, dustless state that is standardized to one-half the strength of Fast Scarlet 2G Base. Hilton-Davis Chemical Co. Div., Sterling Drug Inc., Cincinnati, Ohio. **(Circle D-7 on Reader-Service Card)**

Reactive Dye

Cibacron Yellow G . . . can be applied by exhaustion or padding, and also gives good yields by the Thermofix method. The dye has all the generally good fastness of the Cibacron range and is exceptionally fast to resin finishes. Discharge effects are possible in printing, and the dye is also recommended for dyeing wool by the Neovadine method. Ciba Co., Inc., Fair Lawn, N. J. **(Circle D-8 on Reader-Service Card)**

Tricot Softener

Fanta Soft . . . is a combination of resin binder, pigment, and a softener that produces a soft and pliable hand on tricot fabrics. The product is resistant to yellowing, and does not affect the shade or lightfastness of dyed goods. The matte finish also has good antistatic properties, and the softener is easily applied by conventional means. W. F. Fancourt Co., 516 S. Delaware Ave., Philadelphia, Pa. **(Circle D-9 on Reader-Service Card)**

Reactive Dyes

Reactone Brilliant Yellow 4GL 140% . . . tops a list of Reactone colors announced last month (TEXTILE WORLD Mar. '60, p. 72). Other dyes in the series include: **Reactone Orange G 125%, Reactone Red 2B 170%, Reactone Violet BL, Reactone Blue RLD, Reactone Turquoise Blue FGL 160%, Reactone Navy Blue GRL,** and **Reactone Black RL.**

These reactive dyes are recommended particularly for printing by screen or roller method. They are easily fixed by steam or heat and work well alongside other types of dyes. Geigy Chemical Corp., Ardsley, N. Y. **(Circle D-10 on Reader-Service Card)**

Levelling Agent

Depco Level 52 . . . is particularly suited to producing level dyeings with basic dyes on acrylic fibers. The combined levelling and stripping properties of the product make it valuable in reducing overdyed shades as well as in securing even deposition of dye. De Paul Chemical Co., Inc., 44-27 Purvis St., Long Island City 1, N. Y. **(Circle D-11 on Reader-Service Card)**

LOOK AT NEW DYLEX® K-40 LATEX

. . . for a more flexible backing

This carpet has been backed with a compound using DYLEX K-40 latex, a brand new product for backings which do not require vulcanization. DYLEX K-40 needs no accelerators, *no vulcanizing agents of any kind.* DYLEX K-40 is easy to mix . . . merely add fillers and a small amount of dispersant.

Carpet backings made with DYLEX K-40 have a soft "hand," *and stay flexible.* DYLEX K-40 gives you superior bond and adhesion . . . more tuft-holding strength in both cut and loop pile. Because of its exceptional bonding strength, DYLEX K-40 can also be used as a scrim adhesive.

DYLEX K-40 saves you money. Since there is no vulcanizing, you can use simpler, less expensive mixing equipment. You can use a wider range of dyestuffs because there are no accelerators . . . no danger of a reaction with certain dyes. And the compound has unlimited storage life because it doesn't depend on a chemical reaction to set it.

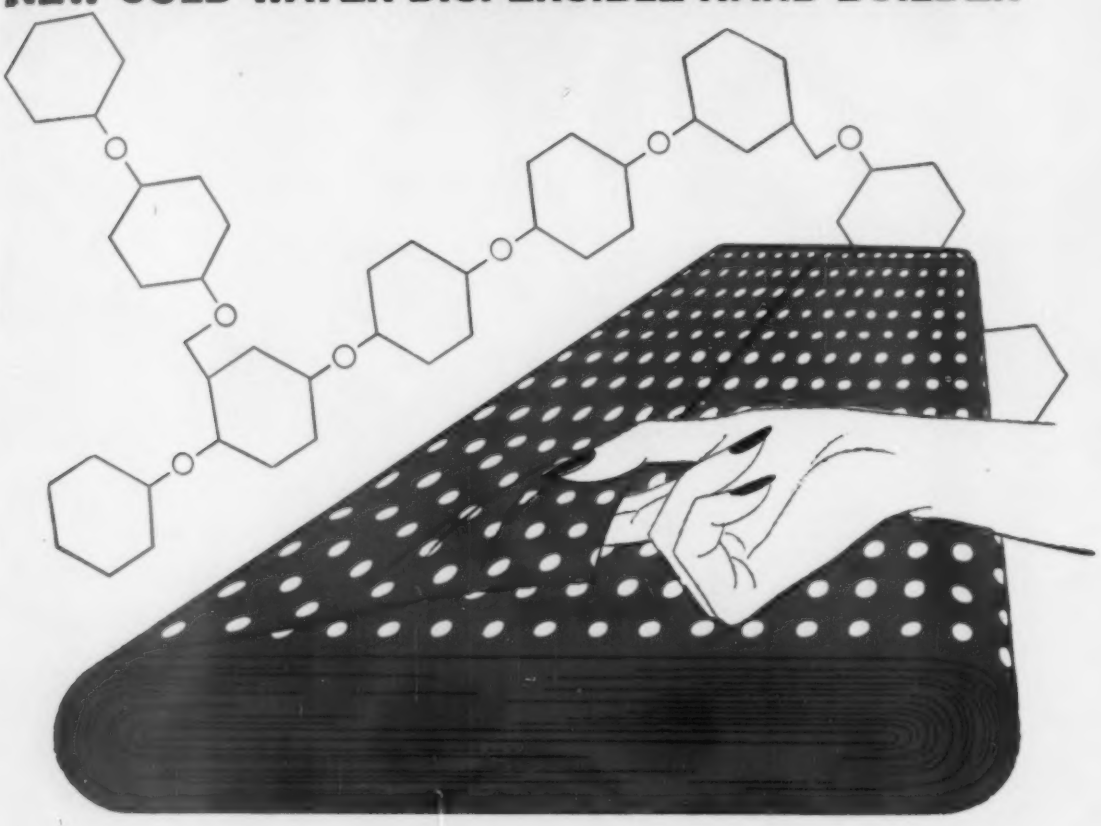
See for yourself. Try this amazing new product in your carpet compound, or send for a sample piece of carpet backed with DYLEX K-40. Check it for softness, note its flexibility, try to crack it, test its aging qualities. Find out how DYLEX K-40 latex makes better carpet backings at less cost. Write Koppers Company Inc., Plastics Division, TW-40, Pittsburgh 19, Pa. Offices in Principal Cities. In Canada: Dominion Anilines and Chemicals Ltd., Toronto, Ontario.

CIRCLE 67 ON READER SERVICE CARD

KOPPERS PLASTICS

Kosol

NEW COLD WATER DISPERSIBLE HAND BUILDER



IMPROVES HAND OF WASH 'N WEAR FABRICS

KOSOL is a new kind of hand builder. With a branched chain type structure that cross-links more readily with resins. Clear. Colorless. Gives a new fullness to wash 'n wear finishes.

KOSOL takes only minutes to prepare. No cooking. No cooling. You simply disperse in cold water. Add to resin mixture. Then apply to fabric!

KOSOL is compatible with all resins now in widespread use. It's another development of textile research at National. Try it for that little extra that means so much in fabrics. Write or call your nearest National office.

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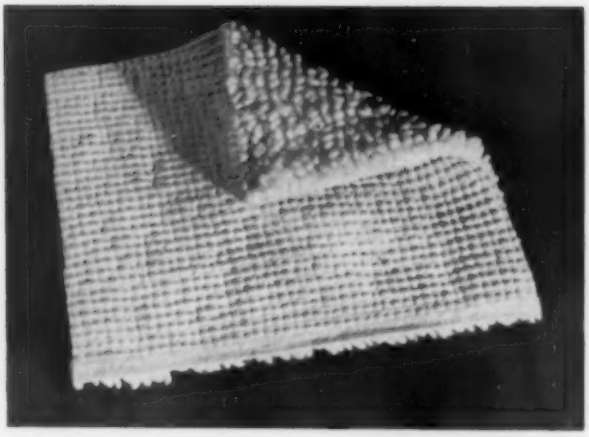


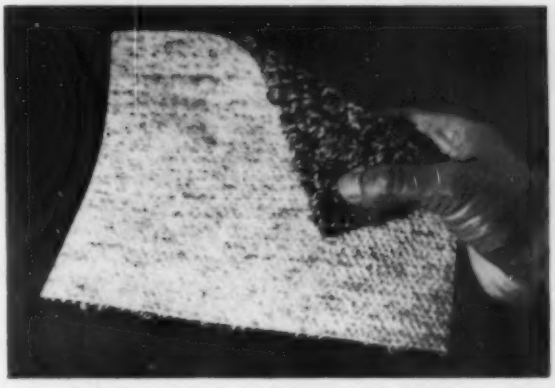
A TYPICAL PRECOATING illustrated here is flexible and will withstand bleaching, dyeing, and laundering during the useful life of the article.

Chemistry and Application Of Rug-Backing Compounds – III

How typical backing formulas are made—

- What goes into precoating compounds
- How aftercoating compounds are made
- Where special blends are useful

By GEORGE BRAWNER



AN AFTERCOATING OF THIS TYPE imparts weight and stiffness to floor coverings. It should age well and not discolor the rug surface.

THE PRECOAT IS A TOP-QUALITY COMPOUND that is formulated to withstand the chemical and physical stresses of bleaching, dyeing, and laundering after it has been applied on the substrate. Such compounds are usually applied to tufted bath-mat sets and scatter rugs by roller coaters and must be resistant to discoloration or degradation in wet processing.

The compound is sometimes referred to as a laundry compound. Emphasis is placed on appearance and hand after laundering, bleaching, and/or dyeing.

The principal faults of precoating compounds that are not properly compounded are discoloration from the action of chlorine in bleaching, or washoff, which is generally caused by improper cure.

A cracked appearance in a precoat indicates overcuring or too much filler. Usually the processing equipment that is used for small articles is small also, and the drying-and-curing step is done in less than 10 mins. Often the whole job is done under infrared heaters.

Quick drying and curing are desirable, and the cost of a precoating compound is of less consideration than the production of the proper qualities.

Precoating compounds range in price from 15 to 20¢

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per lb. on a dry basis in tank-car lots.

A typical precoat formulation is given here:

Ingredients	Dry weight in lbs.
Natural latex	75.00
Stabilizers	0.80
KOH	0.25
GRS 2105	25.00
Slurry:	
Water, dispersing agent, ammonia	
Whiting	200.00
Barytes	10.00
Clay	10.00
TiO_2	7.00
Sulfur (separate)	7.00
ZnO	0.90
Zinc dibutyl dithiocarbamate	5.00
Sodium dibutyl DTC	2.00
Antioxidant	0.50
Karaya gum	1.00
Synthetic gum thickener to viscosity of 1,000 cps., # 3, at 60 rpm.	0.20

Aftercoating Compounds Cost Less

The compounds that are applied to carpeting after dyeing or to carpets that will not subsequently be wetted in processing are generally lower in cost than precoating compounds.

The aftercoat is a medium- to low-cost compound that is selected for its ability to lock the tufts, provide dimensional stability, and stiffen the fabric. The aftercoat is not subjected to subsequent washing or other processes and consequently does not require the high quality of a precoat.

Resistance to cracking is desired but often bypassed, especially when the aftercoat's function is as a primer, to be followed up by a second coating-lamination such as foam rubber or jute lamination. The higher-quality aftercoats do not crack on bending. Aftercoats are roller coated to carpets; and because of the heavy coating required to fill in all voids, they may be slow drying. If purchased in tank-wagon lots, such compounds run about half the cost of the average precoat, in the range of 5 to 15¢ per dry pound.

This relatively low cost is achieved through the use of more filler and low-cost extenders. GRS latex is often used as the base for aftercoat compounds because of its low cost.

Here is a formula for a typical aftercoat:

Ingredients	Dry weight in lbs.
GRS 2000	100.00
Stabilizers	3.50
Slurry:	
Water, dispersing agent, KOH	
Whiting	225.00
Clay	225.00
Sulfur	1.50
ZnO	8.00
Zinc dibutyl DTC	1.50
Tetramethylthiuram disulfide	0.20
Coumarone-indene resin extender	40.00
Antioxidant	1.00
CMC thickener (carboxymethylcellulose) thicken to viscosity of 1,600 to 1,700 cps., # 3, at 60 rpm.	
To increase stiffness, add:	
High-styrene latex	1 to 5.00

GRS 2105 may be substituted for GRS 2000, which will permit a reduction in curing time and make possible the addition of more resin and filler.

Automotive-Carpet Backing

Much of the automotive carpet installed on the floor of cars today is backed with a coating similar in all respects to rug coatings. Identical equipment is used, and drying and curing procedures are basically the same. This backing compound must cover the fiber well, lock the tufts securely, be flexible, and resist cracking. It should dry quickly to give a soft, resilient hand. Tank-wagon purchase price of suitable compounds is in the range of 15 to 18¢ per dry pound.

A basic automotive carpet-backing compound can be formulated from:

Ingredients	Dry weight in lbs.
GRS 2105	60.00
Stabilizers	2.00
GRS 2000	40.00
Slurry:	
Water, dispersing agent, ammonia	
Whiting	350.00
Clay	50.00
Sulfur (separate)	1.20
Zinc mercaptobenzothiole	1.50
ZnO	5.00
Tetramethylthiuram disulfide	0.30
Zinc dibutyl DTC	0.70
Colors as desired	
Antioxidant	1.00
Sensitizer	0.30
Synthetic gum thickener to viscosity of 1,600 cps., # 3, at 60 rpm.	

Specialized Floor Coverings and Backings

New conceptions in floor coverings are constantly being developed. Standard precoat or aftercoat compounds are being applied to the backs of the new fabrics for their nonskid and binding properties.

One such floor covering is made of twisted yarn derived from slit nonwoven fabric. Rugs are also made of twisted paper.

Spraying is the usual method of applying backings to products of these types. Formulations usually include wetting agents; and because viscosity is generally low, fillers have to be selected that won't settle out readily.

Wax-Resistant Nitrile Backings

Many rugs and carpets are now being coated with compounds based on blends of butadiene acrylonitrile and

polyvinyl chloride to obtain maximum resistance to floor waxes and varnishes. Because of the many unknown factors in nitrile-vinyl combinations, exact duplications from compound to compound are difficult to obtain. The combination performs more like a thermoplastic than a thermosetting material.

The nitrile phase of the compound can be cured to the extent of unsaturation offered by free nitrile rubber that has not yet absorbed the vinyl component, but the resultant properties are quasi-plastic in proportion to the vinyl content. Recommendations are often made to maintain drying temperatures above 300° F. to promote fusion of the vinyl. Complete fusion will give a tighter product, but the film will have less capacity for filler. A basic-nitrile-vinyl compound of this type is:

Ingredients	Dry weight in lbs.
Butadiene acrylonitrile latex	70.00
Polyvinyl chloride latex	30.00
Slurry:	
Water, dispersing agent, ammonia	
Whiting	175.00
TiO_2	10.00
Synthetic gum thickener to desired viscosity.	
A sulfur cure for this type of compound can be obtained by adding:	
Sulfur	1.00
ZnO	5.00
Benzothiazyl disulfide	1.00
Tetramethylthiuram disulfide	0.15
Stearic acid	0.50
Antioxidant	0.80
Vinyl stabilizer (antioxidant)	0.25
A sulfurless cure can be obtained by adding:	
N-cyclohexyl-2-benzothiazole sulfenamide	3.00
Tetramethylthiuram disulfide	2.50
Dipentamethylene thiuram tetrasulfide	0.50
Stearic acid	0.50
Antioxidant	0.80
Vinyl stabilizer (antioxidant)	0.25

Generally speaking, compounds that are capable of carrying filler will have a nitrile base that is softer and more subject to light and heat degradation. Tank-wagon prices of nitrile-vinyl compounds will start at about 20¢ and rise as filler content decreases.

Many of the base nitrile latices are polymerized with an excess of surfactant, which means that they will foam during processing; and antifoam must be used to keep this effect to a minimum.

Other Special Backings

Occasionally fire-resistant backings are required. The standard precoat and aftercoat compounds can be improved by adding emulsified plasticizers that assist in reducing flammability. Any chlorine-containing polymer can be used, such as a neoprene or a vinyl-containing blend.

Antistatic backings are necessary in some cases. The most effective compound for reducing static charges in the rug or carpet is one that contains a conductor that dissipates the static through the flooring. Certain types of carbon black have been found to be effective for this purpose. The backing compound is formulated in the standard manner with dispersed carbon black added as part of the filler content.

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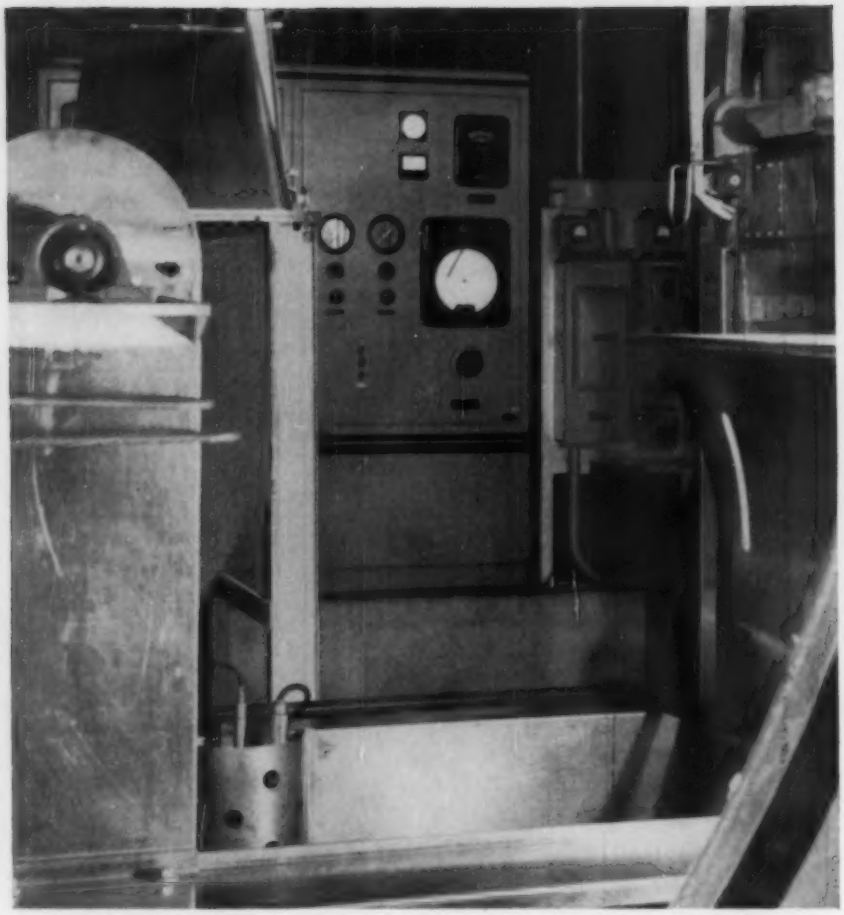

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Sodium Hypochlorite	Dilution for Bleaching
Muriatic Acid	Souring after Causticizing
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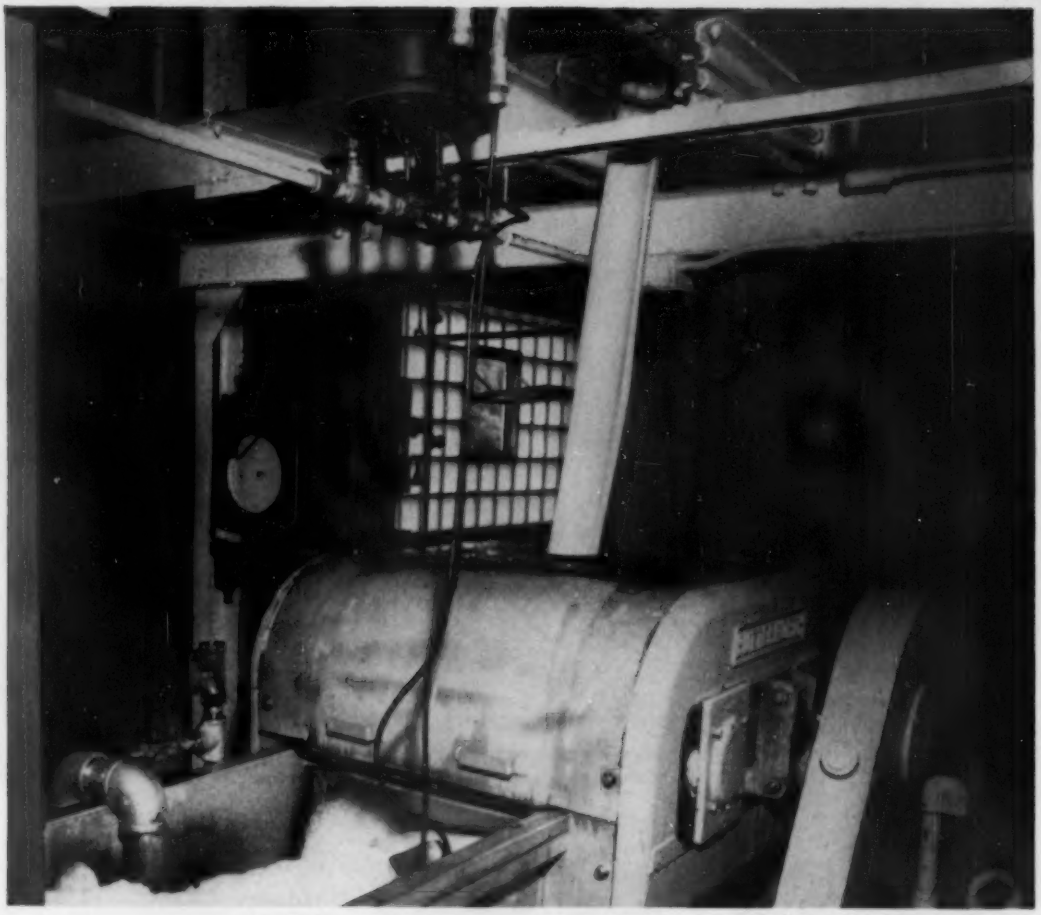

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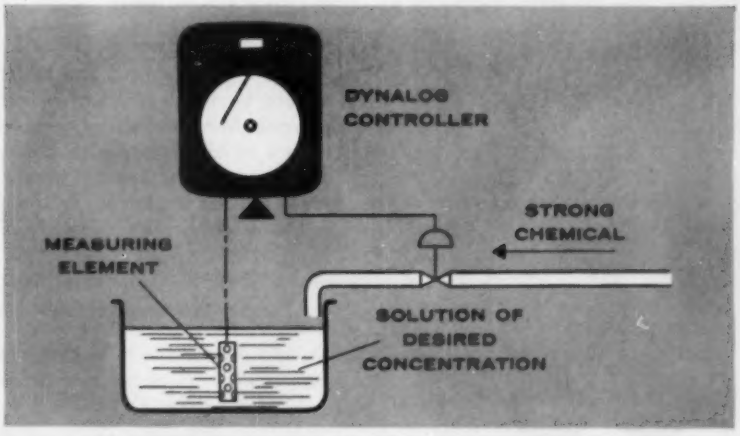

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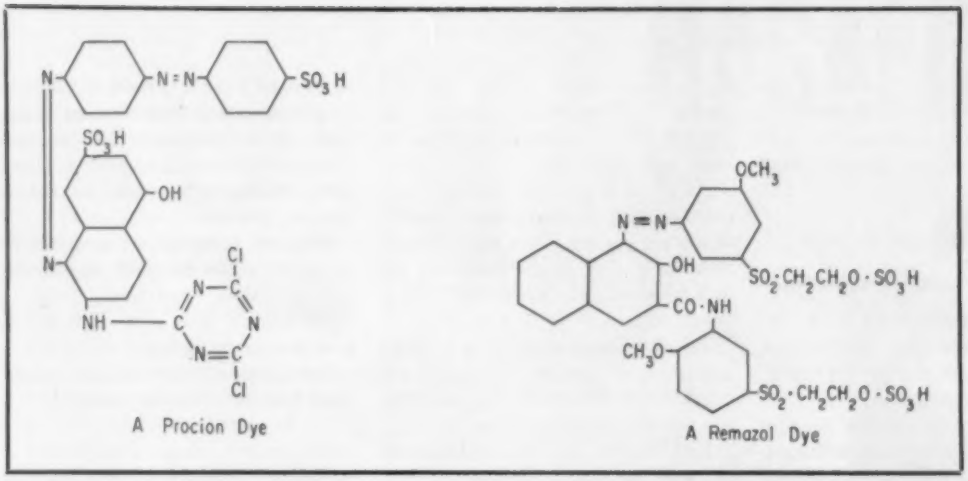


Fig. 1

HERE ARE FORMULAS for two typical reactive dyes. The Procion dye is made reactive by the dichloro-1:3:5-triazine nucleus. The Remazol dye depends on the two beta-hydroxyethyl sulfuric-acid ester sulfone groups for its reactivity.

Reactivity—A New Concept In Chemical Treatment

The reactive dyes have ushered in a new era in the chemical treatment of textiles. This article explains—

- **The chemistry of the various types of reactive dyes**
- **How the principle of reactivity is being extended to finishing processes**

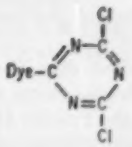
By A. J. HALL, B. Sc., F.R.I.C., F.T.I., F.S.D.C.

THE ALMOST SIMULTANEOUS DISCOVERY by European chemists of three basic types of reactive dyes has opened the door to a host of possibilities in other fields of chemical treatment of fabrics.

Two groups of reactive dyes, the Procions and Cibacrons, depend for their reactivity on colored compounds that contain a 1:3:5-triazine nucleus and that have one or two free chlorine atoms capable of substitutive reaction with hydroxyl, amino, or imino groups. Such groups are found in cellulose, natural protein fibers, and some man-made fibers.

The Remazol type of reactive dye depends on the presence of a reactive beta-hydroxyethyl sulfuric-acid ester sulfone group to attach it to the fiber.

Simplified formulas for the Procion, Cibacron, and Remazol dyes look like this:



(Reactive dichloro-1:3:5-triazine nucleus in a Procion or Cibacron dye.) The reactive beta-hydroxyethyl sulfuric-acid ester sulfone group, typical of the Remazol dyes is attached like this.

Dye$-SO_2-CH_2-CH_2\cdot O\cdot SO_3H$

How the Dyes Combine With Fiber

The early Procions were of the cyanuric-dichloride type; the Procion H series is a monochloride derivative, as are the Cibacrons.

All three types ultimately become chemically combined with cellulosic or other fibers by an etherification reaction but by different routes.

The Procion and Cibacron dyes may be represented by the formula Dye·T−Cl (or Cl_2), in which T represents the triazine nucleus that combines with the fiber in the presence of alkali to give:

Dye · T-O-Cell or Dye·T(O-Cell)(O-Cell)

a result of the reaction:

Dye·T−Cl+Cell−OH → Dye·T−O−Cell+HCl

By contrast, if the Remazol dye is represented by the formula Dye$-SO_2\cdot CH_2\cdot CH_2\cdot O\cdot SO_3H$, in which the O−$SO_3H$ is the solubilizing group, the reaction with alkali goes in two stages: (1) Dye$-SO_2\cdot CH_2\cdot CH_2-O-SO_3H\rightarrow$ Dye$-SO_2\cdot CH=CH_2+H_2SO_4$ and in the presence of Cell−OH gives:

(2) Dye$-SO_2\cdot CH_2\cdot CH_2-O-$Cell

In the first stage of dyeing the beta-hydroxyethyl sulfuric-acid ester sulfone group splits to leave a residual vinyl sulfone group attached to the dye molecule, and in the second stage this vinyl sulfone group combines additively with a hydroxyl group in the cellulose molecule. Typical formulas for Procion and Remazol types are given in Fig. I.

The Procion dyes that carry two reactive chlorine atoms are more reactive than the Procion H type, which has only one chlorine atom that is free to attach itself to fiber. For this reason, the Procion H types are applied at 80° C., whereas the Procions work well at 30° C.

As Fig. I shows, the Remazol dyes carry no sulfonic-acid groups attached to the azo portion of the dye. Enough water solubility is conferred by the beta-hydroxyethyl sulfuric-acid ester group.

The Procion dyes have two added sulfonic-acid groups because the dichloro-1:3:5-triazine nucleus does not provide water solubility.

Both Procion and Remazol dyes react with the water necessary to prepare a dyebath to form by-products of the types, Dye$-SO_2\cdot CH_2\cdot CH_2OH$ (Remazol) or Dye·T−OH (Procion)

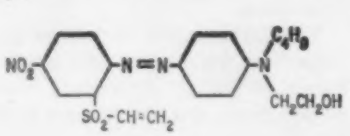
These by-products are water soluble and for the most part are not substantive or reactive toward cellulose. Dyeing conditions must be adjusted to produce as little as possible of these elements, and dyeings must be thoroughly washed to remove all dye not chemically reacted with the fiber.

High dyeing temperatures usually favor the production of side-reaction products, but special dyeing and printing methods are being developed that require high temperatures and even live steam to achieve superior results.

Insoluble Types Are Useful

Some dyes that contain a simple vinyl sulfone group or groups and are based on the formula Dye$-SO_2-CH=CH_2$ have been prepared as such. These dyes are insoluble in water, but under appropriate conditions they can be applied to cellulosic materials with the aid of alkali and so become chemically attached to the fiber.

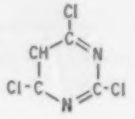
Aqueous dispersions of these dyes will also dye acetate fibers or others amenable to dyeing with a dispersed dye.



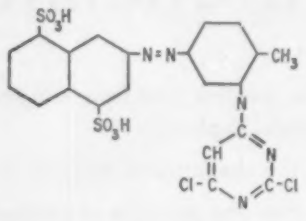
One such dye produces a red-violet shade on acetate or nylon from a soap bath. It is made by coupling diazotized 1-amino-4-nitrobenzene-2-vinyl sulfone with N-beta-hydroxyethyl-n-butylaniline.

Recently it has been found that reactive dyes can be made by reacting 2:4:6-trichloro pyridimine with a water-soluble dye that contains at least one amino group.

The simplest 2:4:6-trichloro pyridimine has the following formula:



A dyestuff made by coupling one mole of diazotized 2-naphthylamine-4:8-disulfonic acid with one mole of ortho-toluidine can be reacted with one mole of the trichloro pyridimine to give the following reactive dye:



New Types Made in Fiber

Reactive dyes can be formed in the fiber by first treating cellulosic materials with a condensation product of cyanuric chloride and 2-amino-8-hydroxynaphthalene-6-sulfonic acid. The condensate should have at least one grouping of this type in the heterocyclic ring:

−N=C−(Halogen)

The goods are impregnated with an aqueous solution of this product and dried at a low temperature.

A second treatment in an alkaline solution of sodium carbonate or caustic soda plus sodium chloride is fol-

lowed by drying and a final treatment in a solution of a diazotized base such as ortho-nitraniline or 1-aminoanthraquinone.

The diazotized base couples with the heterocyclic compound, and in the presence of the alkali the reactive dye couples with the fiber.

Many Reactive Finishes Possible

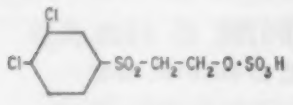
While the range of reactive dyes is being steadily increased, finishing compounds that have reactive properties are also being developed.

An example of this type of product is a water repellent based on stearylamine that has been reacted with 2:4:6-trichloro-1:3:5-triazine to give 2-stearyl amino-4:6-dichloro-1:3:5 triazine. The latter is a reactive water repellent that combines with cellulosic fibers in the presence of alkali. The water repellency is conferred by the hydrophobic stearyl group, $C_{18}H_{37}$.

The treated goods retain their water-repellent qualities even after repeated launderings and drycleanings.

Another method of approach is to use the Remazol formulation. An agent with the formula $C_{18}H_{37}-SO_2-CH_2-CH_2-O\ SO_3H$ is padded on cotton goods and then a further treatment with alkali produces etherified fiber of the type: $Cell-O-CH_2-CH_2-SO_2-C_{18}H_{37}$

A reactive mothproofing compound that is fast to washing is now available to wool finishers. This compound has the formula:



These illustrations indicate the importance of the discovery of the reactive principle in dyeing and finishing and point the way to the development of many new dyes and finishes that are based on the reactive principle.

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LYKOPON

Acrilan fabrics and fabrics made from Acrilan blended with wool or rayon can be printed with several classes of dyes. Here are suggested formulations that are giving satisfactory results in every-day production.

How To Print Acrilan Fabrics

ACRILAN CAN BE PRINTED with disperse, acid, cationic, and vat dyes. The choice of dye to use depends to some extent on the shades involved and how any particular class of dye fits into the usual operation of the plant.

If the fabrics to be printed are made of 100% Acrilan, disperse colors are the first choice in most cases. Acrilan-wool blends are best printed with acid colors. Acrilan-rayon blends can also be printed with acid colors by modified procedures.

Vat colors produce excellent prints on 100% Acrilan and Acrilan-rayon blends.

How To Work Disperse Dyes

Disperse dyes give prints that have good fastness to washing, crocking, light, and perspiration on 100% Acrilan fabrics.

Except for the most brilliant hues, disperse dyes fill most of the requirements of a complete range of shades.

If a very bright color is required to fill in a gap in a pattern, cationic dyes can be used but they must be chosen carefully; and fall-on areas involving disperse and cationic dyes should be kept to a minimum.

The print paste for disperse dyes is made up by pasting the color with 5 parts of glycerine per 100 parts of finished paste and then adding 40 parts of hot water. When the dispersion has cooled, 55 parts of a 1-to-30 mixture of a sodium alginate gum such as Keltex S[1] are added to finish the paste.

After printing, the goods are dried and then steamed at 3 psi. for 45 mins.

The final steps are rinsing in cold water and soaping at 100 to 110° F. with a nonionic detergent. Soaping should be thorough to produce good fastness to washing and crocking.

Some dyes give better yields and color fastness at higher steaming pressures, but many are dulled in shade at 10 psi. pressure; at less than 3 psi. there is usually a serious loss in color value.

The following disperse colors are some that work well in printing Acrilan:

Cibacete Yellow 5 GN, Artisil Dir. Yellow G (Sandoz), Latyl Yellow 4RL (Du Pont), Amacel Printing Orange 3R (Am. Aniline Products), Latyl Cerise N (Du Pont), Celliton Fast Rubine 2BA-CF (Gen. Dyestuff), Cibacete Blue RAF, Latyl Blue RB (Du Pont), Celliton Fast Violet BA-CF (Gen. Dyestuff) Amacel Printing Black MPB (Am. Aniline Products), and Cibacete Printing Black RGN.

How Basic Dyes Are Printed

The cationic basic dyes produce brilliant shades on Acrilan that are also characterized by good fastness to crocking, light, and washing.

The affinity of basic dyes for Acrilan decreases as pH drops; so the print paste should not be acid. Urea is a useful assistant that increases color yield and acts as a dye solvent.

The print paste should be prepared by mixing one part of the dry color with 2½ parts of urea, and then adding 40 parts of hot water. The mixture is stirred until all solids are dissolved, and then cooled. The cool dye solution is stirred into 60 parts of a thickener, which may be based on gum tragacanth.

For fine-line work that requires excellent definition, a product such as Nafka Crystal Gum Supra[2] is suggested.

The dried prints should be steamed at 1 to 2 psi. for

Technical information in this article was supplied by B. Ajdukiewicz, Chemstrand Corp.

45 mins., rinsed, and finally soaped at 120° F. with 1 gram per liter of a nonionic detergent.

If heavy bleeding occurs during soaping, a cationic retarder added to the soaping box will prevent background staining. Basic dyes are not recommended for heavy shades because of high cost and the tendency to bleed excessively during soaping.

If a black line is necessary in a pattern printed with basic colors, a disperse dye or an acid dye should be substituted. Benzyl Black 2BN (Ciba) has been found useful for this purpose if it can be used with the specific basic dyes involved. Pigment blacks may lead to some crocking trouble.

All the newer cationic basic dyes can be used for printing Acrilan fabrics except those that have poor stability to steaming. The following have been found to be useful in practical applications:

Sevron Yellow R (Du Pont), Basacryl Yellow 423 (Putnam), Sevron Yellow 3RL (Du Pont), Genacryl Orange G (Gen. Dyestuff), Genacryl Orange R (Gen. Dyestuff), Sevron Brilliant Red 4G (Du Pont), Sevron Brilliant Red 3B (Du Pont), Sevron Red GL (Du Pont), Sevron Blue B (Du Pont), Sevron Blue 2G (Du Pont), Basacryl Blue 214 (Putnam), and Deorlene Blue 5G (Ciba).

Basic dyes are not recommended for Acrilan-wool and Acrilan-rayon blends because fastness qualities are poor and processing is more complicated.

How To Use Acid Dyes

Acid dyes produce prints on Acrilan that have excellent color yield and good fastness to washing and crocking. The shades are nearly as bright as those produced with basic colors, but their lightfastness is not as good.

The print paste should be prepared as follows:

Paste the dye with 5 parts of Kromfax[3] solvent and dissolve the mixture in 25 parts of hot water together with 5 parts of thiourea. Cool the solution and stir it into 60 parts of standard gum tragacanth paste, and add 5 parts of a 1-to-1 tartaric-acid solution.

The printed goods are steamed and washed in the same way as basic dye prints.

Careful selection of the acid dyes is perhaps more important than is the case for disperse or basic colors. The acid dyes should be obtained in the most-concentrated form available because excess amounts of electrolytic diluents may have an adverse effect on the solubility of the dye. Good solubility is important to the production of good-quality prints.

Acid dyes that have been found useful in printing Acrilan include: Neolan Flavine GFE (Ciba), Cibalan Brilliant Yellow 3GL 133%, Benzyl Fast Yellow 2G (Ciba), Pharmacine Yellow 3G (Verona), Benzyl Fast Orange 2RN Extra (Ciba), Supramine Red 2GA (Gen. Dyestuff), Kiton Fast Scarlet 3B (Ciba), Xylene Milling Red G Conc. (Sandoz), Sulfonine Scarlet GWL (Sandoz), Benzyl Fast Red 2BL (Ciba), Silk Printing Scarlet 2G (Ciba), Benzyl Red BR (Ciba), Cloth Red G (Sandoz), Benzyl Fast Rubine 2B (Ciba), Sulfonine Brilliant Red 3B Conc. (Sandoz), Rose Bengal DY Extra (Ciba), Cibalan Bordeaux RL, Neolan Red R (Ciba), Duro Brilliant Red 3B (Carbic), Pharmacine Scarlet G (Verona), Silk Printing Brown GR (Ciba), Silk Printing Brown RD New (Ciba), Kiton Violet 4 BNS Extra Conc., (Ciba), Xylene Brilliant Cyanine G Conc. (Sandoz), Astracel Blue FBA-CF (Gen. Dyestuff), Brilliant Blue J (Ciba), Benzyl Cyanine 6B (Ciba), Xylene Milling Blue BC (Sandoz), Kiton Blue A (Ciba), Benzyl Black 2BN (Ciba), and Neolan Black WA (Ciba).

Fewer Dyes for Blends

Acrilan-wool blends can be printed with acid dyes, but many of the acid dyes that are satisfactory for 100% Acrilan exhibit poor wetfastness on Acrilan-Wool blends. However, good all-around printing performance can be expected from dyes in the following list:

Benzyl Fast Yellow 2G (Ciba), Benzyl Fast Yellow GW (Ciba), Cibalan Brilliant Yellow 3GL 133%, Pharmacine Yellow 3G (Verona), Xylene Milling Red G Conc. (Sandoz), Duro Brilliant Red 3B (Carbic), Rose Bengal DY Extra (Gen. Dyestuff), Pharmacine Scarlet G (Verona), Kiton Violet 4 BNS Extra Conc. (Ciba), Cibalan Bordeaux RL 200%, Benzyl Cyanine 6B (Ciba) Xylene Brilliant Cyanine G (Sandoz), and Cibalan Black BGL 200%.

If acid colors are applied to Acrilan-rayon blends, it is advisable to reduce the concentration of tartaric acid to 3 parts per 100; and in patterns where several colors are superimposed, to reduce the concentration of thiourea.

Failure to cut back on these chemicals may cause color destruction in areas of heavy fall-on.

Urea can be used to replace thiourea in the formulation but will generally give a somewhat reduced color yield. Cibalan Black BGL gives a very good black on Acrilan-rayon blends and should be applied with thiourea alone and no tartaric acid.

In patterns where another acid color is superimposed on Black BGL, it is best to include a mild alkali in the black print paste to maintain good crockfastness of the black.

Acid-color prints on Acrilan-Rayon fabrics should be steamed for 45 mins. at 1 to 2 psi., rinsed well, and soaped at 105° F. with a nonionic detergent. An aftertreatment with a 1% solution of Sandofix WE[4] or a similar compound will improve fastness to washing and perspiration. If crocking problems occur, an addition to the aftertreating bath of 1% Phobotex FTA[4] will help considerably.

Acid dyes that work well on Acrilan-rayon fabrics include:

Benzyl Fast Yellow 2G (Ciba), Chinoline Yellow Conc. (Geigy), Pharmacine Yellow 3G (Verona), Cibalan Yellow GRL, Supramine Red 2GA (Gen. Dyestuff), Duro Brilliant Red 3B (Carbic), Sulfonine Scarlet GWL (Sandoz), Pharmacine Scarlet G (Verona), Rose Bengal DY Extra (Gen. Dyestuff), Kiton Violet 4BNS Extra Conc. (Ciba), Benzyl Cyanine 6B (Ciba),

Brilliant Blue J (Ciba), Xylene Brilliant Cyanine G Conc. (Sandoz), Cibalan Black BGL 200%, and Neolan Black WA (Ciba).

Printing With Vat Dyes

For the highest fastness requirements, vat dyes should be used on Acrilan or Acrilan-rayon fabrics.

In both cases, formulations are similar. The print paste is based on the familiar potash-Rongalite technique: 100 parts of sodium formaldehyde sulfoxylate are dissolved in 250 parts of hot water and 50 parts of potassium carbonate are added and stirred until dissolved. The reducing mixture is added to 500 parts of gum tragacanth thickener to which has been added 250 parts of Viscotext.[6]

The required dye is then stirred into the paste; 3 to 5 parts of dye per 100 parts of paste are sufficient for heavy shades.

Variations on the print paste are possible, but the alkali content should be kept low.

Ageing can be carried out in the usual way in neutral steam.

Slow Oxidizing Is Best

Sodium perborate or hydrogen peroxide are suitable oxidants, and the oxidizing process should be extended over several boxes, raising the temperature progressively from 140 to 180° F.

If the goods must pass through the oxidizing-soaping range quickly, it is best to add some oxidant to the soap box.

Vat dyes that have proved successful on Acrilan and Acrilan-rayon fabrics are:

Calcoloid Printing Yellow GC Paste (American Cyanamid), Calcosol Golden Yellow GKWP Paste (American Cyanamid), Ciba Orange R Paste, Ciba Scarlet BG Double Paste, Calcosol Scarlet B Printing Paste (American Cyanamid), Indanthrene Brilliant Pink R Suprafix (General Dyestuff), Ciba Red 2B Double Paste, Cibanone Violet 4BP Double Paste, Indanthrene Brown RR Suprafix (Ciba), Mayvat Olive Green B Double Paste (Otto B. May), Calcosol Jade Green NP Supra Double Paste (American Cyanamid), Ciba Blue 2BDG Double Paste, Indanthrene Black TL Suprofix (Gen. Dyestuff), and Ciba Printing Black ARN Paste.

While the print-paste formulations mentioned in this article are gauged primarily for screen-printing methods, roller printers should have little difficulty in making the necessary modifications to suit roller-printing requirements. A certain amount of experimentation will prove profitable in fitting the dyes and assistants to the equipment in the individual plant.

Assistants mentioned in the text are products of:

1. *Kelco Co.*
2. *Morningstar-Paisley, Inc.*
3. *Union Carbide Chemicals Co.*
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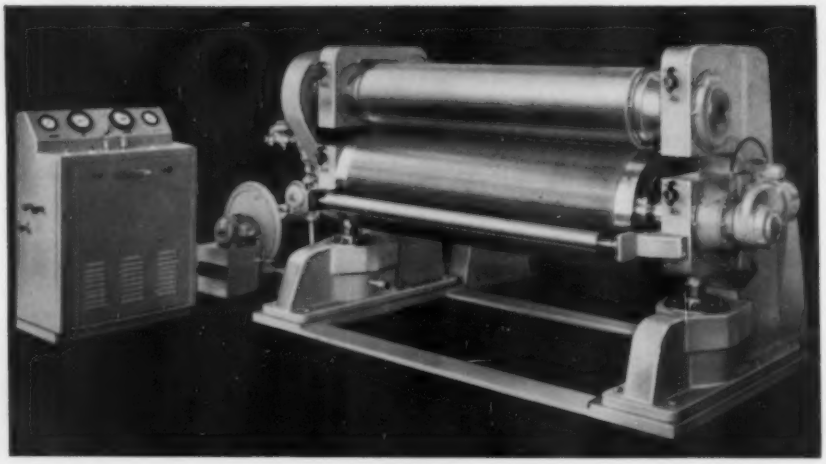

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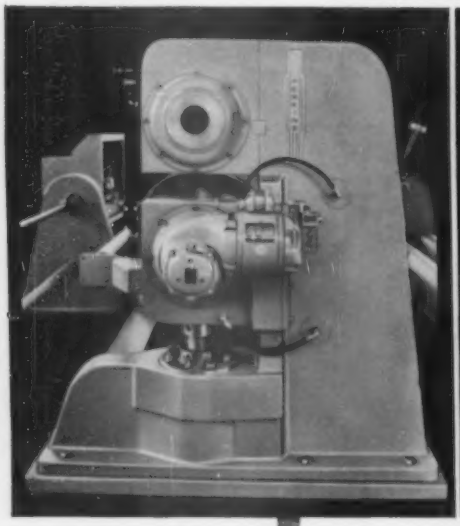

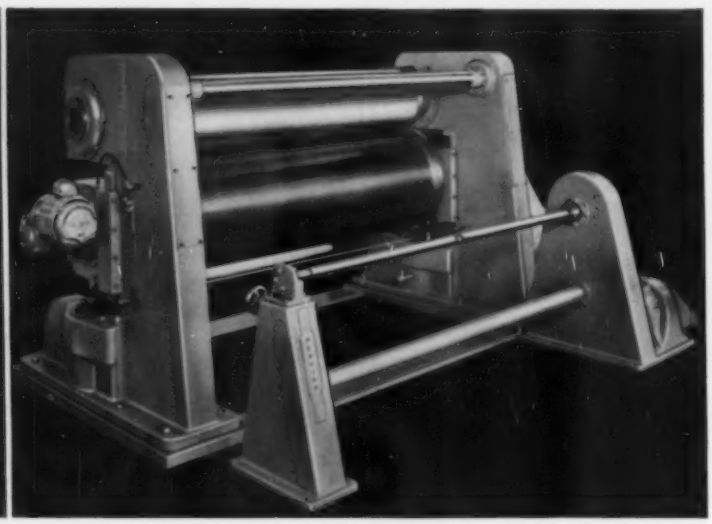

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Nopcosize D	Water-soluble polymeric size developed for slashing Dacron* filament yarns
Nopco 1111	Plasticizer and lubricant for rayon and acetate sizes. Also used extensively in the soaking of rayon crepe yarns
Nopco 1440	Warp size bath additive that acts as a plasticizer, lubricant and penetrant for rayon and acetate sizes
Nopcolube® 55	Lubricant added to polyacrylic acid size bath for Nylon to eliminate topwaxing

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Bishopville Finishing Div., Reeves Bros., Inc., Bishopville, S. C., finishes a wide range of men's-wear fabrics, all based on man-made fibers. Success in a tough field of operation has come from—

- *Close control of each step in the operation*
- *Taking time enough to do a good job*

How Bishopville Finishing Div. Handles Man-Made-Fiber Fabrics

BETTER WORK RATHER THAN HIGHER PRODUCTION appears to keynote management's philosophy at Bishopville Finishing Div., Reeves Bros., Inc.

Working largely in the exacting field of men's-wear fabrics, the plant is set up for and equipped to get a quality job on several lines of man-made-fiber fabrics.

One of the major lines of goods that is dyed and finished at the plant is based on 55% Dacron and 45% rayon. Those fabrics are for the most part 7- to 8-oz. goods, 64 ins. wide in the gray, that finish at 60 ins. Slacks and summer suits are the end products.

Colors range from medium to dark in depth, and solid shades are complemented with many subdued cross-dyed effects.

MODERN BECKS of medium depth are well suited to Bishopville's fabrics.

How Men's Wear Is Routed

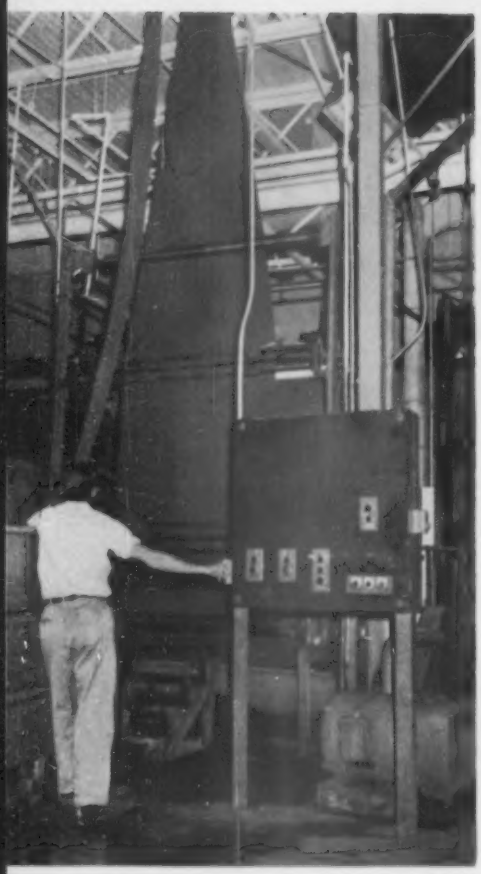
Dacron-rayon blends are first padded with a desizing agent and led immediately into a roller-type steamer where the elevated temperature quickly converts sizing materials into more-soluble form.

The goods then pass into a hot-water wash box and then into a Hennekens boil-off. A mild alkali and synthetic detergent in the boil-off liquor help remove most foreign matter.

The boiled-off goods are loaded directly into stainless-steel dye becks that are equipped with closely fitting covers.

The bath is set with a good dispers-

CHEMICAL TREATMENT and FINISHING



DETWISTING AND DRYING are combined to save labor and handling.

ing agent, and for most shades a carrier of the conventional type is used.

The carrier is first dissolved in the color shop and then added to the beck. The pH of the dyebath is adjusted to suit the dyeing conditions for the fabric at hand.

The bulk of Bishopville's Dacron-rayon fabrics is dyed solid shades, and whenever possible the dyeing of both fibers is done simultaneously. However, very dark shades require a two-bath procedure in which the Dacron is dyed first and the rayon dyed in a following bath.

Single-bath processes are generally carried out at pH 7 to 7.5 in a buffered carrier bath developed and perfected by plant personnel.

Disperse Dyes Most Used

The Dacron component of the men's-wear fabrics is dyed with disperse dyes chosen to give the necessary fastness for the end use.

The dyeing process cannot be hurried and requires about one and one half times as long as rayon and acetate dyeing for full shades in which both fibers are dyed. The rayon component is dyed with direct colors.

The dyeing is done at 208 to 212° F. in order to get maximum speed in the absorption of dye by the Dacron. Toward the end of the process, it may be necessary to let the load coast along temperaturewise after salt has been added to exhaust the direct colors.

Time, temperature, and pH are closely controlled in the critical dyeing operation. Dyeing is by formula, based on the weight of each load. Every possible variable is eliminated; so repeat dyeings can be made with a minimum of color adds for final shading.

Results Checked On First Drying

Dyed goods from the becks are sewn end to end and taken directly to a detwister set up ahead of a pad-tenter range for the initial drying. The range is equipped with a full-scale inspection perch at the delivery end. The long expanse of fabric that passes over the perch permits the operator to check the dyeing for spots, streaks, or other faults that make dyers' lives miserable at times.

A second examination of goods that are reported as less than first quality is generally made on a separate perch so the dyer can decide what type of retreatment is necessary.

Singeing Cuts Pilling Tendency

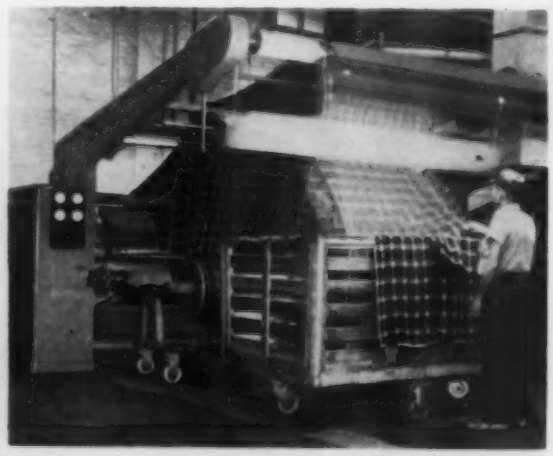
One of the bugbears of Dacron-containing fabrics has been pilling, but in Bishopville's lines this trouble is a minor factor.

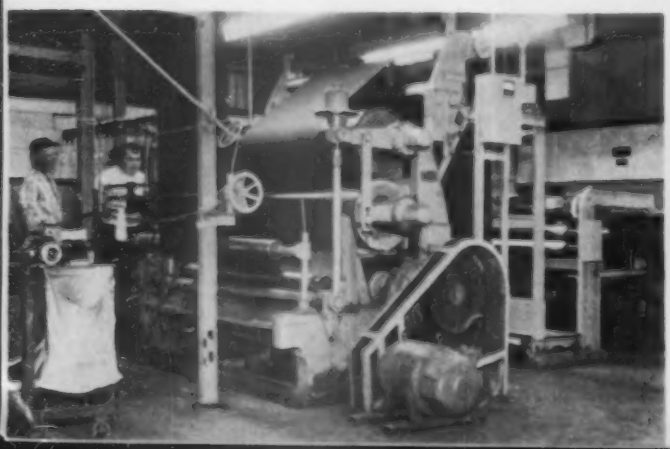
The goods are thoroughly sheared and singed after dyeing to remove all loose surface fiber. Singeing at this point is particularly effective because the dyed goods have had ample opportunity to produce fuzziness during the major operation of dyeing. Too, present-day fabrics that contain a large proportion of Dacron have been engineered to reduce the pilling problem very considerably.

All Bishopville's fabrics are finished

LATEST TYPE NAPPERS are used to finish the line of flannels.

HEAVY THREE-ROLL MANGLE provides two dips and two nips for resin application.





with resins of one type or another. The men's-wear goods are treated with combinations of urea-formaldehyde resins and reactant types, and other selected resins designed to produce special effects and high quality.

Resins are applied on a pad-tenter-loop-curer range that produces a thoroughly relaxed and cured fabric.

The cured fabric is then afterwashed and dried on a pin tenter to complete the job.

J. Leslie Heaton, Bishopville's manager, says: "Afterwashing may strike some people as old-fashioned, but we look on it as good insurance against odor formation and almost essential to the production of the best results in the quality fabrics we produce."

Most goods are ready for final inspection and shipping at this point. In many cases, decatizing or calendering is resorted to to produce a given effect.

Flannels Are Staple Line

Another group of fabrics that moves steadily through Bishopville is a heavier-weight line of rayon-and-acetate flannels. These goods may be dyed solid shades or cross dyed. A very popular check pattern in black and white is generally produced by dyeing the rayon with a developed black that leaves acetate white.

The finishing process for these goods includes a number of runs on high-speed double-acting nappers, followed by shearing. Resins provide the crisp hand and necessary body for these goods, which are in the 11-oz.-per-yd. category. As with the Dacron-rayon blends, these goods are backwashed and pin tentered in a final operation.

Fabric Quality Carefully Checked

Bishopville maintains a testing laboratory that checks every lot to make sure customer's specifications are met. Men's wear, long dominated by wool, carries with it the same tough requirements, regardless of the fiber content. So fastness to light, solvent bleeding, and crocking must be good. Good dimensional stability to washing is also a must for the many styles that are marketed as wash-and-wear, and pill resistance must be high.

Bishopville meets these standards by using all processing steps necessary to do the job right.

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POLYEEN® ...a finish designed to minimize the harshness in wash-and-wear fabrics.

HYSORB® ...a finish that provides "absorbency" in moisture-resistant fabrics.

Creamoyl® ...a group of economical softeners for improved "hand" in fabrics of natural or man-made fibers.

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Ten Tips Insure Good Emulsion Formation

Here are pointers that should be considered if emulsions are used in your plant.

1. Balanced Emulsifier Is Needed

The hydrophobic and hydrophilic components in the emulsifier must be well balanced if emulsion stability is to be expected. Single emulsifiers are sometimes satisfactory, but blends of different emulsifiers often do a better job.

Typical blends are based on sorbitan fatty-acid esters combined with polyoxyethylene derivatives. The former are oil-soluble; the latter are soluble or dispersible in water.

2. Addition Method Is Important

When combination emulsifiers are used at fairly high concentrations to get oil-in-water (o/w) emulsions, it is best to disperse the emulsifier in the oil phase, then add the water slowly to the mixture. After the inversion point is reached (w/o to o/w) the balance of the water can be added more rapidly.

If very little emulsifier is used, it is better to add the oil and emulsifier to the water in a premix to form a coarse emulsion and follow by homogenizing the coarse emulsion.

3. Keep Temperatures Similar

The oil-and-water phases of an emulsion-to-be should be at approximately the same temperature. To allow for cooling during the mixing, the added phase should be 2 to 3° F. warmer than the other phase. If waxes are a part of the oil phase, the temperature should be at least 10° F. higher than the melting point of the wax.

4. Heat Oil-Phase Gently

If oil-phase components need to be melted, do the job in a jacketed kettle to avoid local overheating.

5. To Make Soap-Type Emulsions

If the emulsion is of the o/w soap type, add the alkali to the water phase and mix with the oil phase, which will contain the fatty acid to form the soap *in situ*. In this way, the soap content increases as the emulsion is formed and a smoother product is the result.

6. To Make W/O Emulsions

It is best to add the water to the mixture of oil and emulsifiers and then homogenize the emulsion. If a small amount of hydrophilic emulsifier is present, it may not be necessary to homogenize the emulsion.

7. Keep Air Content Low

Avoid the entrapment of air during the formation of the emulsion. The stability of the emulsion may be reduced if much air is present because the emulsifier tends to migrate to the liquid-air interface instead of remaining at the oil-water boundary. Vortices that tend to form in mixing systems entrap air; so baffle the vessel to break up vortex formation.

8. Preservatives May Be Needed

If the emulsion contains any material that may oxidize or go rancid, a preservative should be added to curb breakdown of the emulsion.

9. How To Control Viscosity

If the viscosity is too high, the proportion of external phase may be increased, or the viscosity of the internal phase may be decreased. A hydrophilic surfactant may help to reduce viscosity.

If the viscosity is too low, thickeners may be added to the external phase, or the proportion of internal-phase material may be increased. Higher-melting-point components in the oil phase may be needed in some cases, and, where practical, air may be added as a third phase.

10. Standardize Ingredient Sources

As far as possible, use the same sources of supply for raw materials. Emulsions are sensitive structures that can be easily upset by seemingly unimportant changes in ingredients, including even the water that is used.

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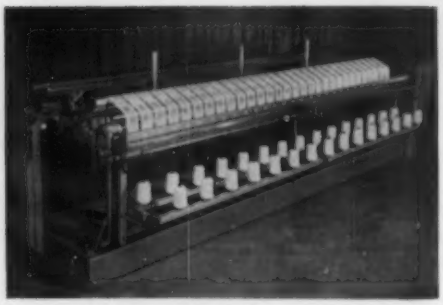

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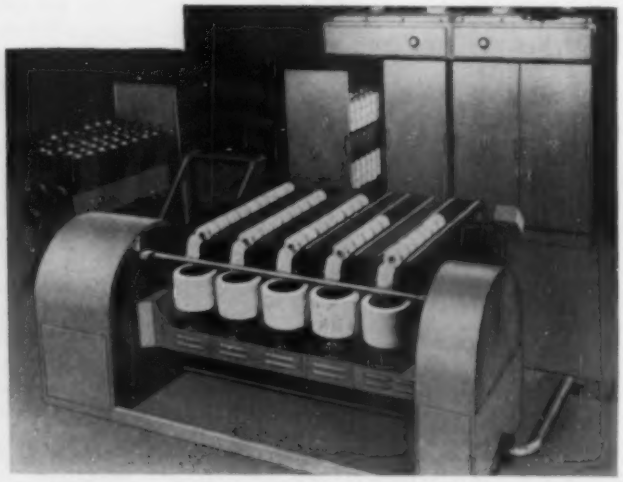

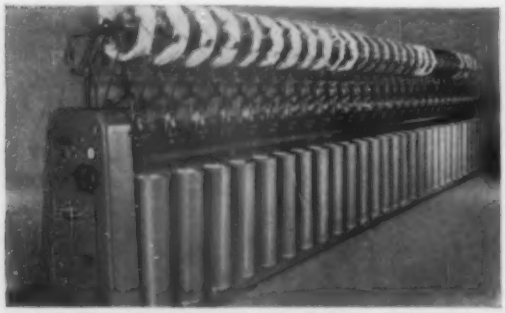

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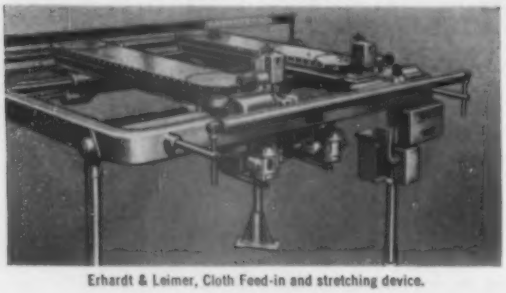
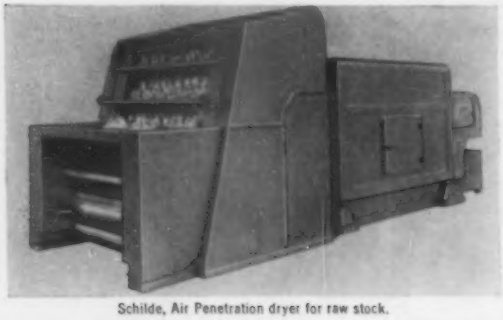


Erhardt & Leimer, Cloth Feed-in and stretching device.



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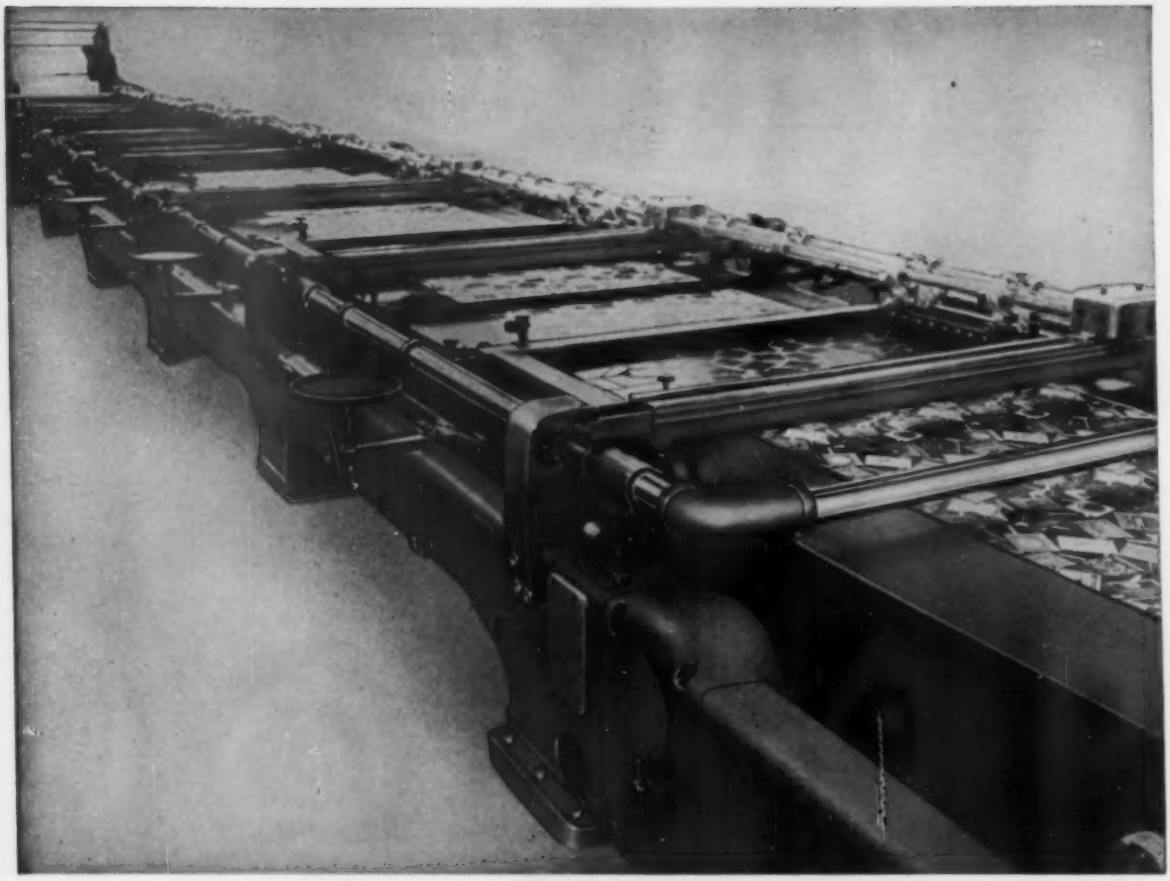

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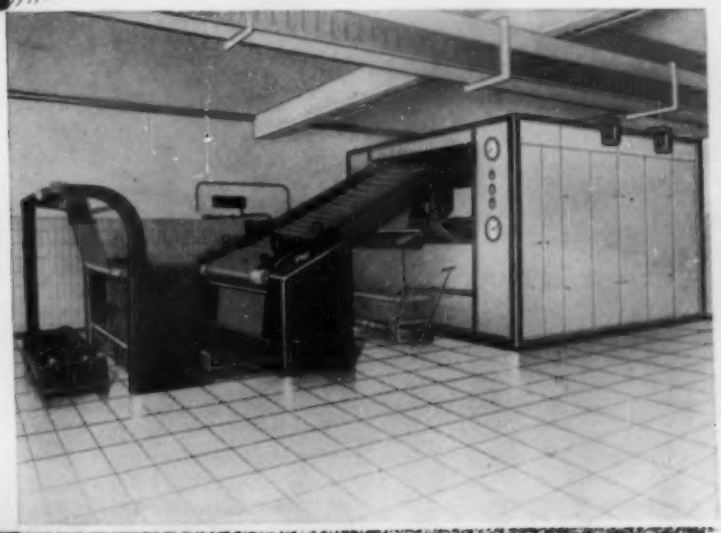

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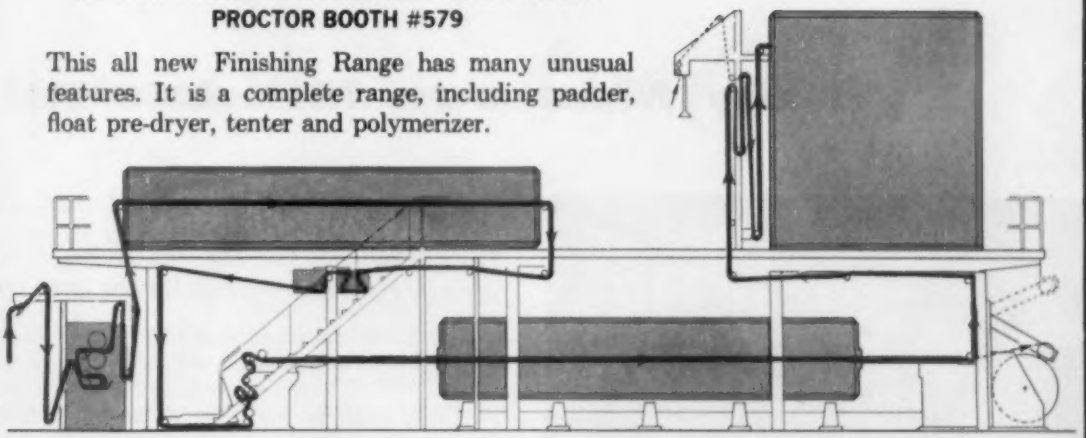

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BELGIAN LOOMS can be started from the front or the rear.

New Mexican Mill Installs

Further proof that mill men are shopping the world for textile equipment regardless of distance and cost is illustrated in the story of Textiles Talamas.

This mill is equipped with heterogeneous makes of machinery from all over the world, and much careful thought was necessary to assemble the equipment into an efficiently coordinated whole. Here's the layout—

By A. J. HIERN

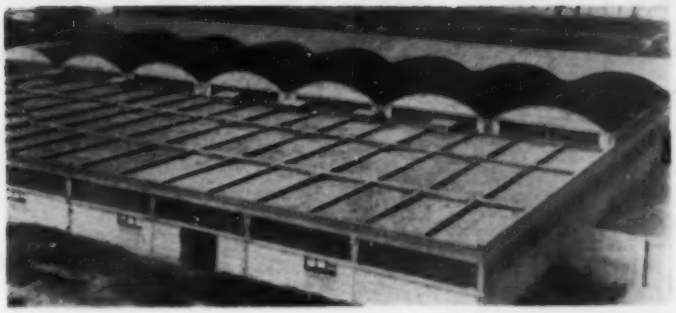
ONE OF THE NEWEST AND MOST MODERN COTTON MILLS IN MEXICO recently went into production at Saltillo in the Northeastern corner of the country.

Built and operated by Textiles Talamas, S. A., the spinning and weaving plant makes denim, twills, and drills for fabrication into work clothes. Owners and employees are all Mexicans.

While methods and layout are similar in general to those used by American mills, much of the equipment is of the latest European design. In fact, name plates and instruction booklets written in seven different languages give the mill a distinctly international atmosphere.

The machinery was selected by on-the-spot study in widely scattered plants in different countries, and many

ITALIAN SPINNING FRAMES feature large packages and 3-in. rings. They have 280 spindles each.



BUILDINGS of modern Mexican construction have plenty of space for expansion.

Machines From *Six Countries*

careful calculations were necessary to coordinate the equipment into a well-balanced unit. Operation is based largely on American weights and measures, although Mexico's legal standard is the metric system.

Cotton used is $1\frac{1}{32}$-in. M and SLM American Upland grown in Mexico. One waste and two blending feeders supply a single picker that produces laps of good evenness at 411 lbs. per hr.

Openers and pickers operate as a unit. Only one operator is required to feed the blending feeders, remove the laps, and weigh them on an automatic recording scale.

Each phase of the operation is monitored by a central control panel that lights up when something goes wrong. Machinery in this department is from Trutzschler of Germany.

Additional German equipment includes 27 Ingolstadt cards equipped with Jungbauer vacuum strippers and Walters electrically tempered card clothing. Speeds and settings are similar to those used in American mills. For example, doffer speed is 10 rpm. and setting from cylinder to doffer is 0.005 in. All 27 cards are operated by one man.

Drawing Runs 300 Ft. Per Min.

Four Saco-Lowell drawing frames are used to make 60-grain sliver at 300 ft. per min. The management likes these frames both for their high speed and the fact that the rolls seldom have to be changed for variation in fiber length.

Two 90-spindle 12x6 Ingolstadt roving frames equipped with antifriction bearings and Adamstop controls produce 0.45- and 0.65-hk. roving. One of these frames has a three-roll drafting system; the other has a four-roll system. Spindle speed for both frames is 863 rpm.

In the spinning room there are 13 Carniti frames from Italy. These frames have 280 spindles each, 3-in. rings, and 13-in. bobbins. They operate at a spindle speed of 8,000 rpm. and spin from 8s to 12s warp and 12s to 16s filling. Evenness and breaking strength are said to be good.

Filling yarn is wound on a 100-spindle Leesona cone winder at 550 yds. per min. A 150-spindle Abbott automatic cone winder winds warp yarn at 625 yds. per min. A 36-spindle Schweiter winder with an automatic bobbin feeder is used for quilling. Efficiency of this machine is 94%.

Warping is done on a Cocker ball warper and a Reiner beam warper. A nine-cylinder Cocker slasher is used to prepare the warp for weaving.

In the weave room there are 80 48-in. Belgian-made Picanol President looms running 176 ppm. and making goods 43 ins. wide. Weaving efficiency averages 95%, and work assignments vary from 20 to 24 looms per weaver.

Auxiliary equipment includes Neu Uni-Brumaire air conditioning for the spinning room and a 1,000-hp., 440-v., 60-cycle SLM diesel engine for producing all power required by the mill. Air conditioning is from France; the diesel engine is from Switzerland.

Saltillo water is extremely hard. Textiles Talamos tried a simple zeolite softener in the beginning, but it failed to condition the water properly. Humidifier ducts clogged up, and scale formed on the spinning rings. Travelers burned up rapidly because of this scale.

The trouble was stopped by the installation of an Elgin monobed deionizer that takes out all solids and produces plenty of pure, soft water.

Buildings are of modern Mexican construction and have heavily insulated roofs. Ample space was planned for safe and efficient operation, and no overhead shafting is used.

Textiles Talamas uses the Barnes system to determine work assignments and pay rates for piece work. All wages are based on individual production. Actual cash wages, exclusive of fringe benefits, are three times the legal Mexican minimum and approximately double the prevailing rates in comparable textile mills that pay by the day.

Weave More Acetate Taffetas With New Size Preparation

• Well-slashed warps contribute to higher weave-room efficiency by reducing loom stops and eliminating defects such as tear marks, reediness, and warp and filling cracks.

THE NEWER SYNTHETIC RESINS as a size preparation are being used by many mills weaving continuous-filament-acetate and similar fabrics. The resins are based on vinyl and styrene compounds and have to a great extent standardized and simplified the preparation of sizing solutions.

Large batches of size can be made up at one time to further assure day-to-day uniformity. The solutions do not mildew or sour and can be kept indefinitely so that small lots and leftovers do not have to be thrown away.

The solutions can be prepared in all types of kettles, heaters, and heating equipment. However, high-speed mixers insure maximum efficiency. If equipment has been used for other products, it should be cleaned thoroughly before a synthetic resin is prepared. You must also use accurate weighing facilities to insure continued uniformity and economy.

Mills Use Three Common Methods

The three most-common methods of preparing a typical filament-acetate size mix of 100 gals. are:

Method A

1. To 60 gals. of cold water, sift in a synthetic resin.
2. Allow to agitate for 10 mins.
3. Turn on steam and raise to 190 to 200° F. with stirring, and hold at this temperature for 30 mins.
4. Turn off steam and stop agitation.
5. Fill to 100 gals. with cold water.

Method B

1. Heat 65 gals. of water to 160° F.
2. Cut off the steam and start the mixer.
3. Pour in the synthetic resin. For slower agitators, sift in the synthetic resin.
4. Raise the temperature 190 to 200° F.
5. Continue mixing for 30 or more mins. at this temperature.
6. Cut off the steam and stop the mixer.
7. Dilute with cold water to 100 gals.

Method C

1. Heat 65 gals. of water to 200° F.
2. Cut off the steam and start the mixer.
3. Pour in the synthetic resin.
4. Mix for 30 mins. without steam.
5. Stop the mixer.
6. Dilute with cold water to 100 gals. Start the mixer again to distribute the water thoroughly.

Methods of preparing size solutions were assembled by Monsanto Chemical Co.

Method A is particularly applicable for equipment with relatively slow mixing apparatus.

It's important for the size line to be equipped with a filtering apparatus either at the storage kettle or size box, or both. A 30-den.-nylon sheer fabric or its equivalent in a metal screen (100 mesh) is satisfactory. The filter eliminates foreign matter from the size box.

Individual concentration of the synthetic resin depends on local conditions of water, degree of immersion, type of slasher rolls, amount of roll pressure, and type of yarn. Wet pickup on filament-acetate warps varies from 40 to 80%.

Also, customers differ in their requirements of size content in their fabrics. Differences in fabric constructions and operating conditions also control size-content variation. Usually size deposits range from 2½ to 4½%. Therefore size-mix concentrations for filament acetate may vary from 40 to 60 lbs. of synthetic resin per 100 gals. of size solution.

Solutions Can Be Standardized

The following table is a guide to individual formulations of size solutions made with synthetic resin:

Resin (%)	Lbs. of resin per 100 gals. of water	Weight of 100 gals. of solution
2.0	16 lbs. 12¾ oz	839 lbs. 13 oz.
2.5	21 lbs.	841 lbs. 8 oz.
3.0	25 lbs. 4½ oz.	842 lbs. 5 oz.
3.5	28 lbs. 8 oz.	844 lbs. 13 oz.
4.0	33 lbs. 14 oz.	846 lbs. 8 oz.
4.5	38 lbs. 3 oz.	848 lbs. 2 oz.
5.0	42 lbs. 8 oz.	850 lbs.
5.5	46 lbs. 14 oz.	852 lbs. 5 oz.
6.0	51 lbs. 4 oz.	854 lbs.
6.5	55 lbs. 10 oz.	855 lbs. 11 oz.
7.0	60 lbs.	857 lbs. 6 oz.
7.5	64 lbs. 7 oz.	859 lbs.
8.0	68 lbs. 14 oz.	860 lbs. 11 oz.

When additives such as urea or a lubricant are to be used with synthetic resin, they should be added when the resin is completely dissolved and before the size mix is diluted to the finished volume. Urea may be added directly to the size mix. But paste-type lubricant should be made into a slurry in a separate container before it is added to the mix.

Additives should be selected with great care since some materials adversely affect the desirable properties of the synthetic solution and film.

The newest lighting practices in cotton-classing rooms for color grading cover the scope, quality, quantity, type, and geometry of illumination.

Newest Way To Light Cotton-Classing Rooms

UNTIL 1940, practically all cotton classing was done in daylight, much of it in specially lighted rooms with skylights designed to provide enough light and uniform light on the classing tables. Because color is an important quality factor in establishing the price and use of cotton, the color quality of lighting is also very important.

The daylight color of cotton and of the cotton standard is the factor the classer keeps constantly in mind. In classing rapidly, he refers to physical standards only occasionally each day. Therefore the lighting in a classing room provides (1) constant color and (2) cotton as nearly as possible as it would appear in daylight so that the classer can take full advantage of training and memory.

The main reason for changing cotton-classing rooms from daylight to artificial lighting is that artificial light can be kept far more uniform in both color and the amount of simulated daylight.

Cotton Can Be Classed Any Time

As a result, classing no longer depends on hours when good daylight is available. And in addition, a classer can go from one classing room to another even in widely separated geographical locations without having to make adjustments for wide differences in amount and quality of lighting.

The most favorable condition for lighting cotton-classing rooms for color grading is not known at the present. But the standard for color quality of illumination is the color and spectral quality of daylight of a moderately overcast northern sky.

For light sources that include fluorescent lamps, the U. S. Department of Agriculture requires a minimum of 60 to 80 ft.-cs. from center to limits of classing area at the time of installation.

But in some instances, illumination even above 400 ft.-cs. is very poor. Optimum conditions lie somewhere between 80 and 400 ft.-cs.

Average Lighting Is 100 Ft.-Cs.

Most recent installations are well above the minimum requirements and usually reach the range of 90 to 110 ft.-cs. at the time of installation.

Light is generally diffused but with enough direction to allow a perception of depth as the classer looks into his sample. It is as uniform as possible through all working areas of the room.

There should be no glare and no crosslighting, and the brightness contrast of the light source and its surrounding area is held to a minimum.

Lighting units supply the required amount and color of illumination over the surface of each classing table when the units are placed end to end over the tables.

Because cotton-classing rooms are often very dusty, closed units are used. They are as light in weight as practical and are easy to install, inspect, and maintain. Usually air conditioning is installed along with new lighting.

Lamp Installation Is Planned

Units of about 2x4 ft. are widely used because they meet specifications well. They have spectrally neutral-diffusing glass that not only diffuses the light but provides a very low brightness contrast. For best results, they are installed in this way:

1. The diffusing glass at the bottom of the units is set 10 ft. from the floor and parallel to it in rows centered 7 ft. apart.

2. For a single table, not less than three units are used and they are installed end to end. For a small classing room, the minimum is two rows of units with four units to each row.

3. For average-size and large rooms, an even number of rows is used. A minimum of four rows is used for average-size rooms. The number increases to 6, 8, and 10 for larger rooms with tables no longer than 8 ft.

Ambient Colors Affect Classing

So that all space in the room can be used, lighting units extend to within 3 to 4 ft. of the side walls and as close to the end walls as possible.

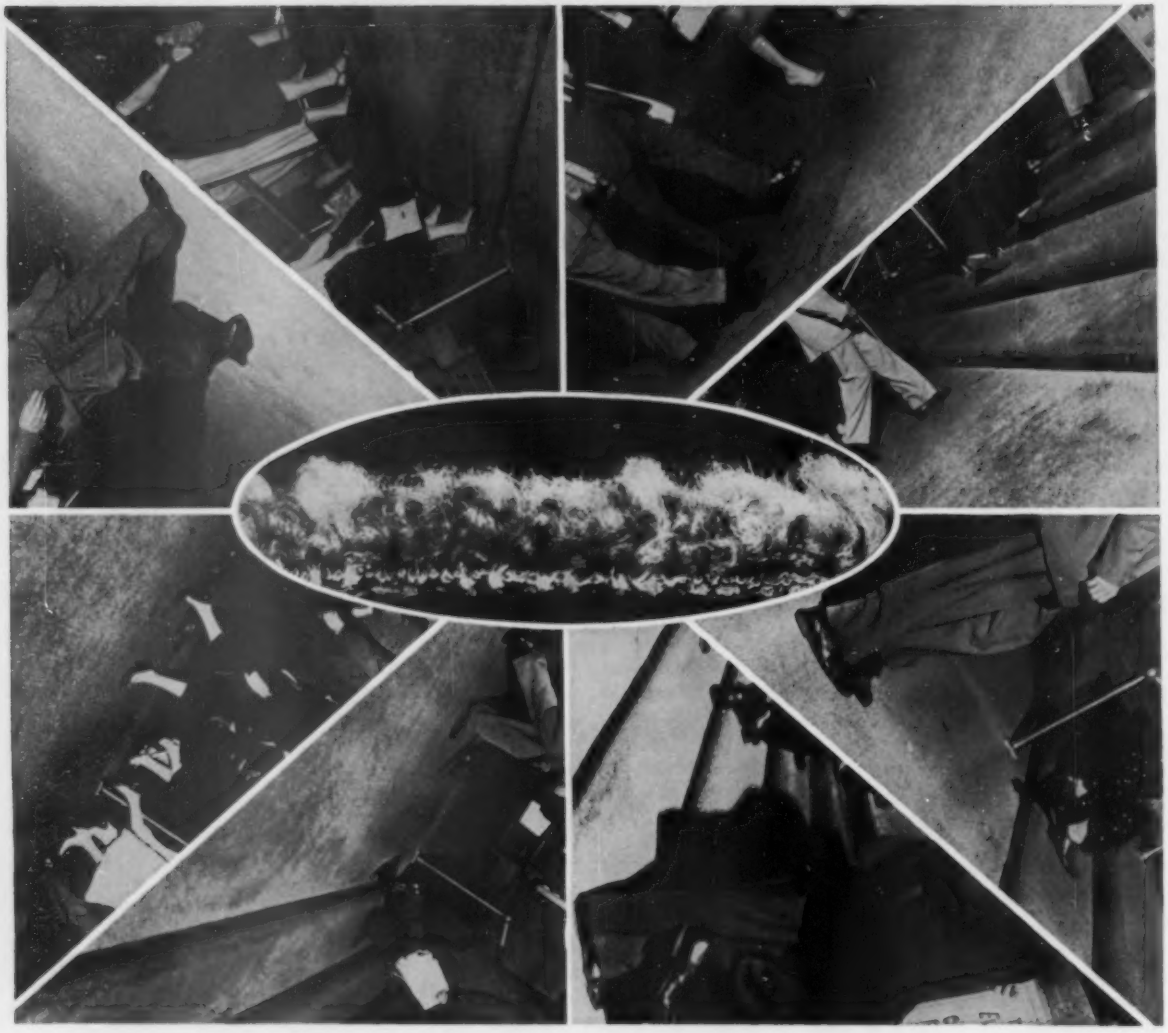
Tables may be placed either parallel with the rows of lights or at right angles to them. This arrangement is controlled by table length; and for tables no longer than 8 ft., it is best to set them at right angles. But when illumination is uniform, tables are placed in the most convenient locations.

The color of walls, ceilings, floors, furniture, and even the color of cotton itself if it covers a large area, has a considerable effect on the lighting of a room. Color affects both the amount of light reflected and the brightness contrast.

Classing rooms are painted a neutral color so that no one chromatic color will be outstanding or diminished more than another. Neutral colors may be light or dark, from white through a series of grays to black. The lightness of the gray to be used in a room depends on the amount of light coming into the room.

Based on tentative recommended practices compiled by American Society for Testing Materials.

TOUGH YARNS FOR TOUGH JOBS...



...CARPET, for example

Recently, a dramatic comparison wear-test of carpets of Textured Caprolan was conducted by Allied Chemical in New York's busy Penn Station. More than a million-and-a-half people trampled across the carpet without any detectable sign of wear or significant loss of texture. This is easily seen in the cross section of the actual carpet shown above. The test was a milestone in the rapid progress of textured filament nylon for home furnishings fabrics such as carpets and upholstery.

This innovation, pioneered by Allied Chemical, was made possible by the introduction of our Caprolan nylon heavy yarns. Strong and durable, they have an outstanding affinity for virtually every class of dyestuff. These white, white yarns also possess excellent workability with heat and are completely compliant with every texturing process which has been called to our attention in the past four years!

Caprolan heavy yarns are now included in U.S. Navy specifications for marine rope, Government specifications for aircraft seat belt webbings and are enjoying increasing use in fire hose, seine twine, cords and dozens of other end-uses where toughness, strength and flexibility are essential.

If you have a tough job, we have the tough yarns for it. Call our technical staff for help in improving existing products or developing new ones with our wide range of deniers in Caprolan nylon heavy yarns.

TEXTURED caprolan®
THE NYLON FIBER BY ALLIED CHEMICAL

Allied Chemical

Fiber Marketing Dept., 261 Madison Ave., New York 16, N.Y.

New Type Rayon Fiber

American Viscose Corp. has announced that it is using the trademark Avlin for its new multicellular rayon fiber. The new staple fiber was known as RD100 in its development stage. It is now in limited commercial production.

The Avlin rayon fiber has an unique cross section and cellular structure, the company says. As a result, it clings to itself in a tight bond and entwines other fibers in the blends, thus giving firmness and bulk to fabrics.

The use of the name Avlin will be confined to the fibers when used in fabrics, either 100% or in blends, that meet the company's quality-control standards.

Beaunit Plans New Plant

Facilities for annual production of 12-million lbs. of polypropylene fiber will be set up in Elizabethton, Tenn., by Beaunit Mills.

Since the machinery delivery cannot be completed until October, the fiber cannot be expected to be on commercial scale before the end of the year.

The fiber is recommended for blankets, carpets, ropes, blends with other fibers, and fiber fill.

Tricot Institute Is Formed

A new association, The Tricot Institute of America, Inc., joined the family of textile organizations last month. The institute will launch a promotion program for tricot, establish production standards, act as an information center, consider legislative problems, establish cooperative procedures with related industries, and conduct marketing research for members.

Institute leaders hope to be spending $200,000 annually on advertising and promotion within two years.

Charles E. Lovett, Deering, Milliken & Co., has been named acting president. Edward M. Meyers Associates, 43 West 54th St., New York 19, N. Y., an advertising and public relations firm, has been named to direct the Institute's promotional program. Lee Parsons, of American Cotton Manufacturers Institute, is secretary.

New Name for Orlon 21

Du Pont has adopted the trademark Orlon Sayelle for its new acrylic fiber that was introduced in October as Orlon 21.

Knitted garments of the new yarn are now available, and hand-knitting yarns are expected to be in the stores this fall.

An evaluation of Orlon Sayelle in woven fabric is underway.

Aldon's New Carpet Line

Aldon Rug Mills, Inc., of Lenni Mills, is using textured Caprolan nylon for its first entry into the continuous-filament nylon field with its new "Golden 60's" line.

The new line features a round-wire boucle tweed with a custom-weave back. The new carpet is available in Glade Green, Mode Beige, Indian Brown, Empire Gold, Slate Gray, and Ripple Green.

New Nonwovens

Borlan Corp.'s newly formed Flexlan Div. is now marketing its new Flexlan nonwovens.

The new nonwovens are said to have high crush resistance and resilience, good porosity, good acoustical qualities, and uniform flexibility and strength in all directions. They are lightweight and quick drying.

Thicknesses range from seven to 69 mils. The fabrics are available in 40-, 54-, and 58-in. widths.

The division is initially confining the new fabrics to industrial markets but will also extend its operations to the apparel field.

Pepperell's New Cord

Pepperell Mfg. Co. has introduced a new Midwale cord for fall outerwear.

The new cord comes in two versions. Palette 12 is an 8-oz. combed cord. The other, Magna 13, is a 8½-oz. carded cord.

Midwale cord is available in Spanish Bronze, Bronzine, Sea Chest, Smokestone, and Diplomat Gray.

New Stretch Terry Cloth

Stretch Fabrics, Inc., has introduced a new terry cloth made of 60% cotton and 40% textured nylon. The facing of the cloth is cotton; the backing nylon.

It is soft and absorbent and can be stretched in two directions.

The new terry cloth is available in white, turquoise, pale yellow, and pink.

Terry Stretch cloth will soon appear in infants' crawlers, jumpers, and sleepwear. Men's and women's sportswear are other potential markets.

New Name for Teron

Fiber Industries, Inc., is using the trademark Fortrel for its polyester fiber. Fortrel replaces the name Teron, which had been tentatively selected earlier.

Apparel made of Fortrel yarns will be on the market for the first time in the spring of 1961.

New Ecclesiastical Fabric

Hi Landenau Textile Corp. introduced a new wash-and-wear fabric of 50% Kodel and 50% solution-dyed rayon for ecclesiastical habits.

The fabric, called Padre, is available in black only and is 45-ins. wide. It sells for $1.60 a yd.

The fabric does not crock or bleed and it can be trimmed with white or worn over white garments.

New Treated Fabrics

Burlington Retail Fabrics Co. has announced that several-million yards of wash-and-wear fabrics treated with Scotchgard stain repeller will be available over the counter this June.

The fabrics are in Mooresville's Aristomoor textured gingham plaids and are available in about 20 designs. They will retail at $1 a yd. They will be available in department stores throughout the United States and in some foreign countries.

New Crib-Mattress Pad

Bates Fabrics, Inc., has introduced a new baby crib-mattress pad. Bates plans to expand into the diaper-service field with this new product.

Thee pad is made of 100% long-staple cotton. It is unquilted.

Pads can be supplied to fit every crib on the market and special sizes are available upon request.

Survey on Men's Wear

The Clothing Manufacturers Association conducted a survey of retailers in order to determine clothing trends in men's wear for 1960.

Here are the results of the survey:

The soft natural-shoulder look, with or without the vest, will grow in popularity. The conventional, natural-body type of garment will remain dominant but will decline somewhat in importance.

A new style, called the inter-continental, is being introduced this spring. The new style is midway between the more extreme continental and the American natural.

Wool will continue to be the most popular type of fabrics preferred in suits. Blends of man-made fibers will increase in demand. Checks and plaids will be popular.

In sportswear, the conventional body will dominate with the continental type increasing in popularity.

The Raglan sleeve and the Bal collar will be more popular on topcoats this year.

Tweeds and midweights will be popular for topcoats. Velours and tweeds will be used greatly in overcoats with worsted cheviots closely following.

Olive shades in fall outerwear will be used.

New Nylon Suede

Iselin-Jefferson Co., sales subsidiary of Dan River Mills, Inc., is marketing a nylon-suede fabric for popular-priced men's casual shoes called Islon.

According to the company, Islon doesn't scuff and is completely washable. Rain doesn't hurt it.

Islon may ultimately be found in a variety of products from pool-table tops to ladies' umbrellas, the company says.

New Use for Troytuf

Troy Blanket Mills' nonwoven Dacron fiber blanket, Troytuf, is being used by the Veteran's Administration's Prosthetics Center for better socket and stump fitting in artificial limbs.

Troytuf, made of Dacron and a polyester resin, does not craze or crack. It can be easily modified and polished, sanded or smoothed back to its original finish.

Chicopee's Miracloth

Chicopee Mfg. Co.'s Miracloth of nonwoven rayon is included with every new plastic toy sinks made by American Metal Specialties Corp.

The dishcloth is enclosed in a polyethylene bag and is scaled in size for a child.

Use of Sanitized Additives

American Viscose Corp. has received an exclusive license to use Sanitized antibacterial additives in the manufacture of its Avisco rayon and acetate fibers.

The company has developed a method to introduce Sanitized chemicals directly into the spinning mixture. The process was developed by the company in cooperation with Sanitized Sales Co. of America, Inc. The bacteriostat additive is said to be effective through repeated fabric launderings.

Acetate tricot fabrics of the new treated fiber that meet the requirements of the Avisco Integrity Program will carry three tags denoting quality control: the Avisco Integrity Tag, the Good Housekeeping Seal, and the New Sanitized trademark.

New Dynel Fabrics

Travis Fabrics, Inc., Industrial Div., and Franklin Mfg. Co. have introduced new lines of 100% Dynel fabrics for chemical-resistant work clothing and utility garments.

Franklin is featuring "X-Tel" twill fabrics. They are 45-ins. wide, and have an antistatic finish.

Travis's new additions are a 6-oz. twill in natural, charcoal, green and navy, and a new 6-oz. taffeta in a novelty salt-and-pepper effect.

Wash-and-Wear Survey

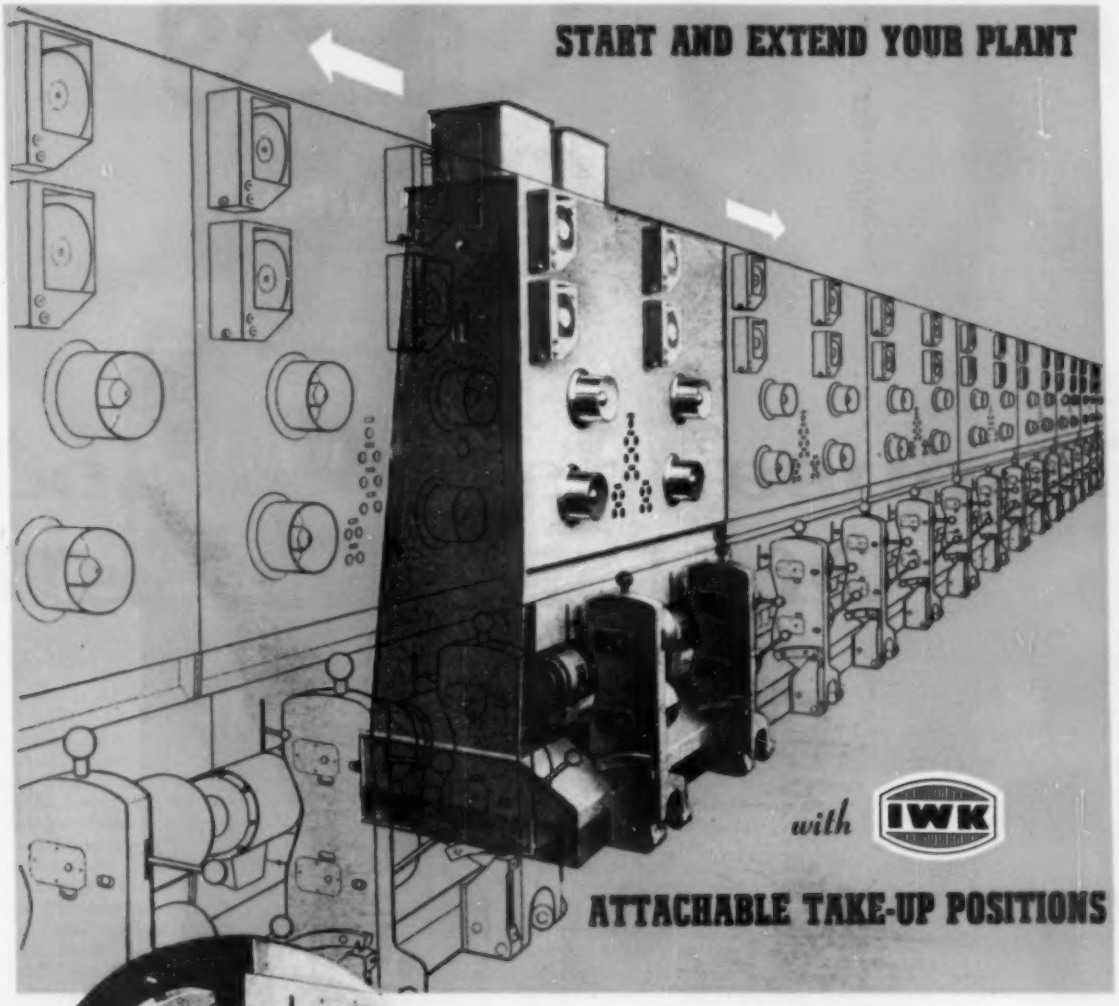
Consumers Union has tested 18 men's wash-and-wear cotton shirts and, while three models were found to be significantly superior, none was considered satisfactory for average use without some ironing.

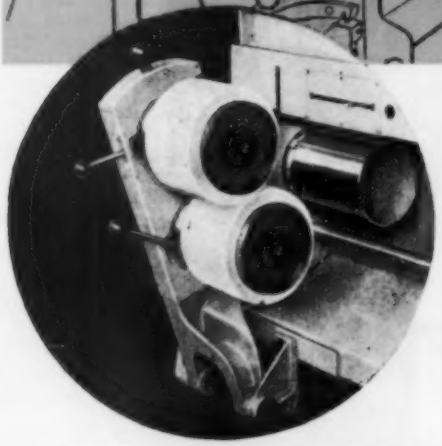
"For home laundering," says the Union, "any of the shirts tested by CU (and doubtless many locally sold brands) will be easier to iron than any ordinary cotton-broadcloth shirt. But, most men will not want to wear even the best of them without some ironing."

Everglaze Promotion

The Everglaze Marketing Div. of Joseph Bancroft & Sons Co. is putting a large consumer advertising campaign behind its leading trademarks: Ban-Lon, BanCare, and Everglaze Minicare.

A two color, two-page spread is scheduled for 13 magazines of national circulation.





Tandem arrangement of bobbins for doubling the production.

Optional extension of the machine to the left or to the right by attaching further take-up positions.

Space-saving design. The main drive is separate from the machine, with the whole range of spinning heads being available for the take-up positions.

Individual stopping of each thread. Friction roller, traverse and godet wheels of each take-up position are driven by individual motors.

High traverse speed for extreme thread speed with smoothly operating machine.

Take-up positions available also in double-sided design according to the arrangement of spinning heads.

Please ask for manufacturing programme on our Chemical Fibre Machines.

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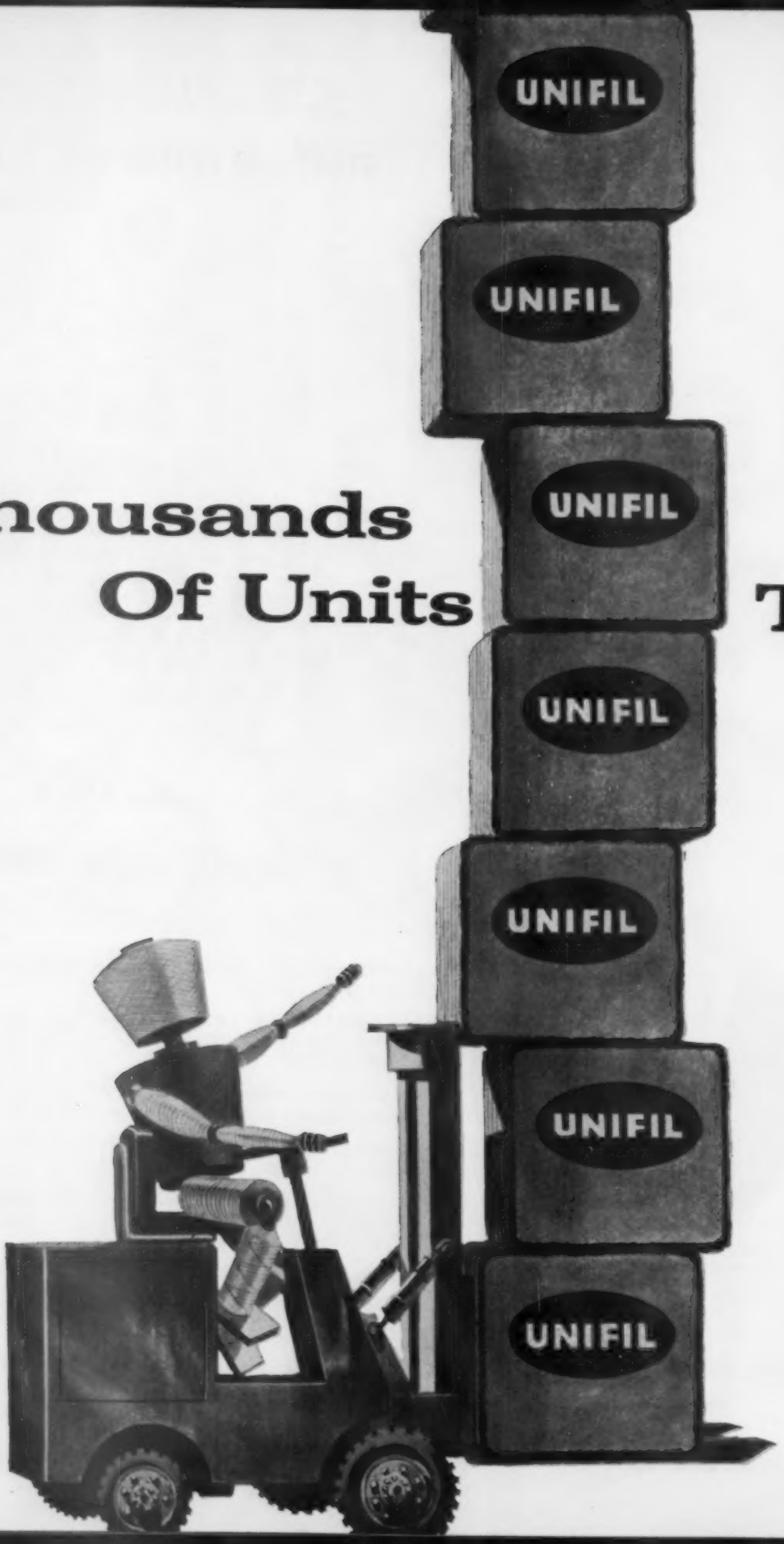

Leading Textile Mills...

More and more modern mills are turning to UNIFIL® Loom Winders as the proved approach to better economy and higher productivity. Most of these mills first learn about the outstanding advantages of UNIFIL Loom Winders through a Leesona "Profit Factor Analysis". This detailed analysis of filling yarn preparation methods, carried out by Leesona Engineers, shows mill management exactly how UNIFIL Loom Winders can prove these analyses correct . . . and reorders follow *fast!*

This extra performance by UNIFIL Loom Winders is what you can expect . . . they bring the entire process of filling yarn preparation to the loom. UNIFIL Loom Winders provide all the advantages of weaving-from-a-cone . . . on all counts and types of yarns, both cotton and synthetic. For example, they greatly improve the quality of fabrics woven from fine yarns . . . give fabrics with textured yarn filling a uniformity not possible before. And savings in production costs quickly pay for UNIFIL Loom Winders.

Let a "Profit Factor Analysis" show you how UNIFIL Loom Winders can improve weaving and profits in *your* mill. Ask your Leesona Sales Engineer in Boston, Philadelphia, Charlotte, Atlanta, or Los Angeles. In Canada: Montreal or Hamilton. Or write LEESONA CORPORATION, P. O. Box 1605, Providence 1, Rhode Island.

Here are just a few of many modern mills which are saving with UNIFIL Loom Winders:

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BERKSHIRE HATHAWAY INC.
BURLINGTON INDUSTRIES, INC.
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JUDSON MILLS
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Be sure to visit us at the American Textile Machinery Exhibition—International Booths 197 through 211, Atlantic City Auditorium May 23-27, 1960, Atlantic City, New Jersey.

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MagneDraft*, using the forces of magnetic attraction to produce required roll pressures, gives the cleanest, most efficient operation of any spinning drafting element ever developed. *Completely eliminated are saddles, stirrups, levers, hooks, springs, and weights* used with conventional drafting systems. Most important — MagneDraft requires *no lubrication* (oil or grease) in the drafting zone. Maintenance costs are reduced to an absolute minimum due to the few component parts. A unique method of supporting the front top roll makes piecing-up around the end a very quick and simple operation.

MagneDraft installations in leading mills are producing yarns of superior quality with a substantial reduction in drafting gear wear and power consumption. Get all the facts from your nearest Saco-Lowell sales office.

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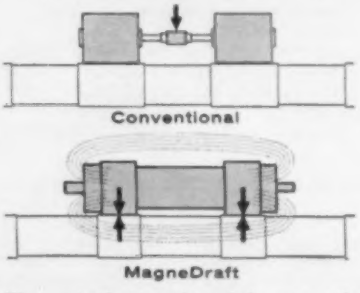
WORN NECKS ON STEEL ROLLS ELIMINATED



The mutual attraction of the magnetic forces gives a "squeezing together" pressure at the nips, instead of the "pushing down" between the cots of the conventionally weighted top roll. This greatly reduces wear in the entire drafting element, eliminating worn necks on steel rolls.

See this machinery at the A.T.M.A. Exhibition, Atlantic City, May 23-27. Saco-Lowell Booth 482.

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Salable Waste Can Be An Expensive Proposition

Technical Editor:

We make considerable salable waste in our mill. I am interested in getting a waste-control program started and want to get all facts available on the subject before taking up the problem with management.

Can you tell me the best way to keep track of how much waste we are making and how to figure the cost of salable waste? (1499)

Most mills weigh and record the amounts of different types of waste—card fly and strips, soft waste, hard waste, sweeps, etc. But each mill should also know how much raw material (cotton, wool, rayon, or other fibers) it takes into the plant and how much material comes out as finished product and as waste.

In many cases, the total pounds turned out will amount to more than the weight of the raw material put in. To find out how much waste you've really made, you need to know how much water was in the raw material when it entered the plant and how much water, starch, and size are in the finished goods that go out.

There are three items of cost in your waste: (1) the cost of the raw material, (2) the cost of processing the fiber up to the point where the waste was made, and (3) the cost of whatever materials (tint, dye, starch, size, etc.) you have put into the product up to the point where the waste was made.

The sales value of the waste subtracted from that total cost of the waste gives you the net cost (or loss) of the waste to the mill.

Sometimes it is surprising to find out what that cost amounts to. Some filament-rayon mills hold it to 1.5 to 2¢ per lb. of fiber entering the plant. In some worsted mills, it runs as high as 60 to 70¢ per lb.

Simple Staining Test Separates Two Nylons

Technical Editor:

We are using both nylon 6 and nylon 6,6 in our plant and occasionally run into trouble from mixups between the two. Is there any quick test we can use that will distinguish one from the other? (1481)

A simple staining test will separate these two nylons. Soak a small sample of the yarn in question in a solution of Neocarmine B for 5 mins. at room temperature. Do not heat the solution. Rinse the sample in fresh water. After rinsing, nylon 6 will be stained a dull bluish pink. Nylon 6,6 will have only a trace of color.

Colored Spots Show Up In Knitted Fabrics

Technical Editor:

What is the cause of pink, red, and blue spots that occasionally are found in bleached knitted fabrics? Could they be caused by colored chalk or crayon? (1491)

One mill recently made a complete study of this problem through its chemical and physical laboratory and found that these spots are caused by used bagging on cotton bales. This bagging was evidently used previously for colored fly, threads, or fabric; and small amounts of the colored material were carried over into the cotton.

Colored spots could be caused by indelible chalk or wax crayon, but most mills today are very careful to check chalk used to make sure that bleaching or washing will remove the chalk marks.

Do you need help on a technical problem? TEXTILE WORLD is at your service in helping solve problems in yarn manufacturing, weaving, knitting, dyeing, finishing, and other textile operations. A large staff of mill men, consultants, and other experts are available for authoritative answers. Send your problem to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

Adapt Calender To Fireproof Knitted Fabrics

Technical Editor:

We are having trouble in getting a satisfactory fireproofing finish at a reasonable cost on fleeced knitted fabrics. We treat these goods in the dye kettle and have no means of recovering the excess liquor. How can we cut our costs? (1502)

You will probably have to apply your fireproofing material in a light pad or quetsch if you want to approach a reasonable cost. Most knitted-fabric plants have calenders that could be fitted with a pan under the lower roll. The treating liquor can be fed to the pan and the lower calender roll will pick up enough liquor to saturate the fabric with the fireproofing compound.

If your goods are very heavy, it might be necessary to fit a small roll in the pan so that the goods can be led through the liquor and then up into the calender nip.

Should Chenille Cloth Be Calendered or Steamed?

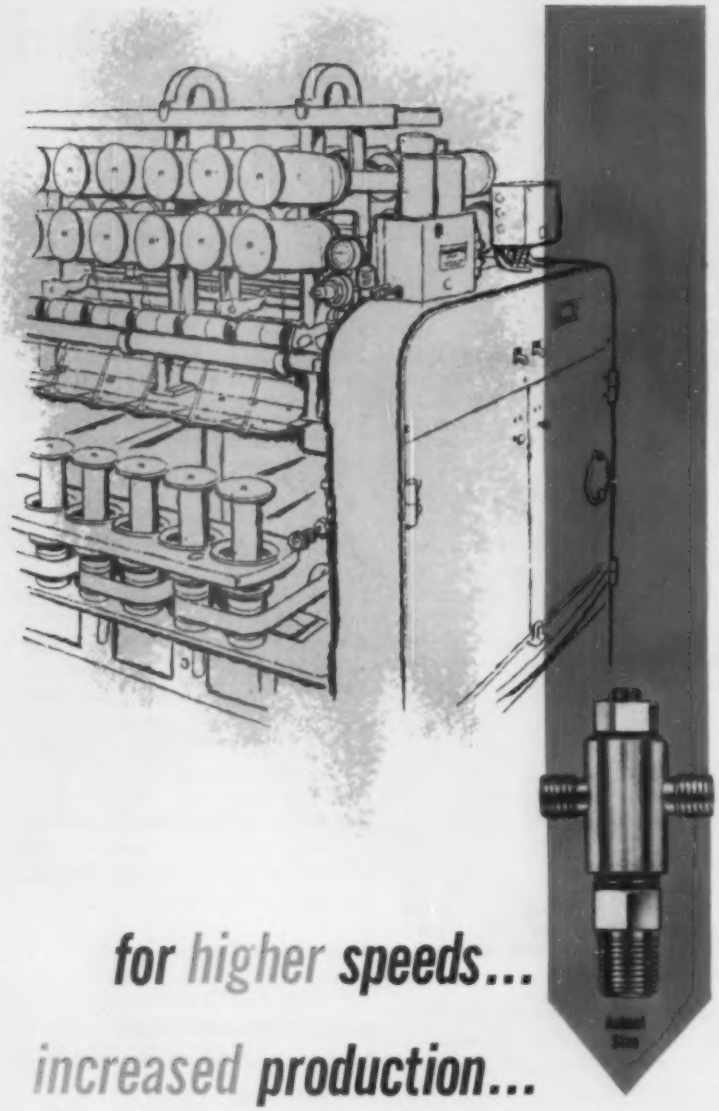
Technical Editor:

After knitting and washing, should chenille cloth used for knitted suits and dresses be calendered, hand framed on a steam table, or both? (1501)

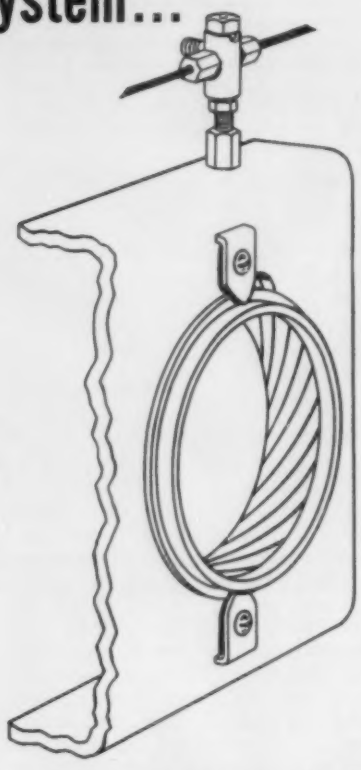
The answer depends primarily on the quality of goods required by the customer.

If you want to produce a high-quality garment that is stable and does not lose shape, by all means put the cloth through the calendering and steaming processes and add semi-decatizing if your cost structure permits.

If you are producing a low-quality volume fabric, take your choice as to which processes to use or omit. However, it would pay to do a bit of experimenting before throwing out or adding processes since results will be directly related to the setup of the rest of the mill.



New Adjustable Accumite® Ring Lubrication System...



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When you order new spinning or twister frames (or just new rings), specify Alemite's new adjustable Accumite System for increased production and lower costs. This accurate, economical, low-pressure lubrication system assures automatic ring lubrication while the machine is in operation. Adjustable measuring valves meter exact amounts of refinery-clean lubricant to every ring on the frame rail.

Because an Accumite System maintains a constant, proper lubricant film, it assures even tension and uniformity of thread. It virtually eliminates product spoilage due to over lubrication – eliminates drip and spray. The Accumite System reduces lubricant consumption and prolongs ring life at higher operating speeds.

Send for all the facts on the Alemite Accumite System – important production tool of the textile industry!

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Intersecting Drawing Frame

A Servo-Drafter intersecting drawing frame designed to produce high-quality yarn in fewer operations by maintaining consistent yard-for-yard sliver weight has been developed by The Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 15, Ohio.

Designed for all top-making, drawing, and precombing applications, the machine retains the features and quality standards of previous Pin Drafter models. However, it provides the extra advantage of precise weight control, which is accurate within 1%. The machine, in a single draft, can correct input-weight variations of as much as ± 25% in wool and all man-made fibers. Floor-space remains unchanged from previous models.

A combination hydraulic and mechanical measuring and control system has a pair of mating mechanical rolls between which each yard of entering stock passes enroute to the faller bars. Variations in stock weight (thickness) cause variations in roll separation; and these variations are transmitted mechanically to a rotating memory wheel.

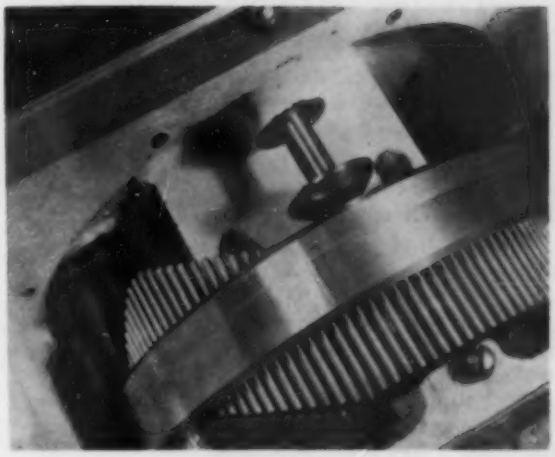
Around the circumference of the memory wheel, at $\frac{1}{16}$-in. intervals, is a series of 120 moveable, precision-ground pins that are automatically positioned to correspond to the pattern of roll separation produced by passage of the entering stock. The rotating memory wheel in effect introduces a time delay in machine response to allow the stock to travel from the roll to the faller-bar mechanism.

The memory-wheel pins are positioned at one point in the wheel's arc, then read and cleared at another point in the arc, thus providing the required time delay. A total of 90 of the closely spaced pins are in use at all times between the positioning and reading points in the wheel arc to detect even minute variations in sliver weight down to less than 1%. Because the individual pins are both positioned and read from the same end, possible variations in over-all pin length have no adverse effect on operational accuracy.

A hydraulic servo translates the pin-position variations into faller-bar operating-speed changes to achieve consistent yard-for-yard sliver weight. The result is that when the memory-wheel pins indicate increased entering-stock weight, the servo, through a variable-speed transmission, decreases faller-bar speed proportionally. When the memory wheel indicates decreased entering-stock weight, the servo accordingly signals an increase in faller-bar speed.

Faller-bar operating speed, as in the manufacturer's other Pin Drafters, averages 1,500 drops per minute. However, this speed is automatically varied over a range of ± 25% with the Servo-Drafter in achieving sliver-weight control.

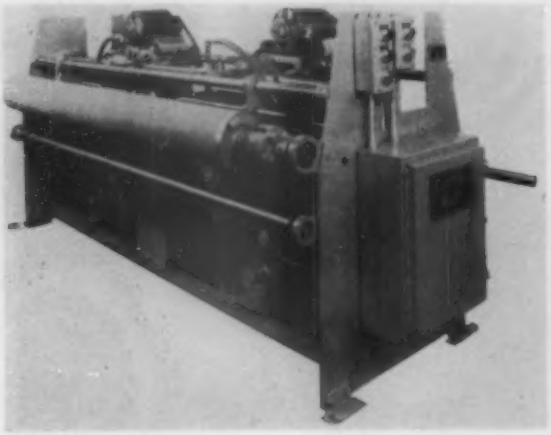
Basic setup of the new machine is the same as for previous models. Calibration of the servo control during stock change-over is simple and can be made while the machine is running.



All operating units of the Servo-Drafter are guarded for safety, yet they are readily accessible for servicing. The machine's hydraulic system is of packaged design, which is similar in construction to the units in many modern machine tools.

The Servo-Drafter consistently provides improvements in sliver-weight coefficients of between 5 and 25%, depending upon the particular stock. **Circle T-1 on Reader-Service Card**

Selvage Shear



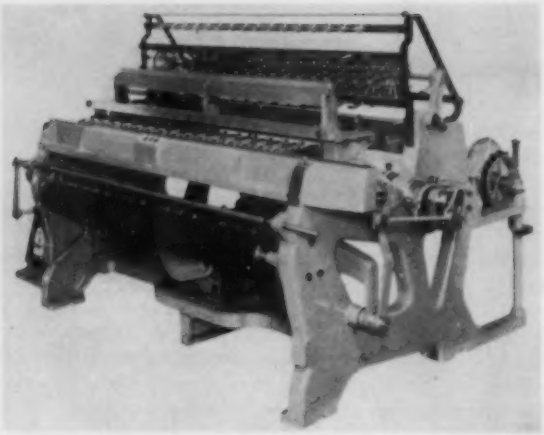
A high-speed precision selvage shear has been marketed by Curtis & Marble Machine Co., 72 Cambridge St., Worcester, Mass., and Laurens Rd., Greenville, S. C.

The SL model, as it is called, uses compressed air rather than mechanical feelers to maintain alignment of the selvage with the cutting head. The edge-detector mechanism is adjustably fastened to the shearing head; so it may be set to cut any wanted residual fringe from 1/32- to 1/4-in. in length.

The shear is particularly suitable for shearing goods from the Draper shuttleless loom, and has shown outstanding performance on conventional fabrics.

Operating speeds of 60 to 110 yds. per min. are possible on fabrics 14 to 120 ins. in width. All machine and motor bearings are sealed and packed with lubricant for life. The entire shearing unit can be removed for grinding or repairs. **Circle T-2 on Reader-Service Card**

Shuttleless Needle Loom



A shuttleless multihead needle loom, Ultratex 16/25, for narrow fabrics that runs 800 rpm. has been announced by Texnovo S.p.A., Milan, Italy. The loom is made in two models: (1) for rigid tapes up to 1 in. wide and (2) for elastic webbings up to 1½ ins. wide. Both models have 16 weaving units that are mounted alternately on the same loom frame.

Over-all picks per minute for the 16 heads result in approximately 20,000 single picks.

The loom is 100% automatic. Filling yarn is supplied from cones that weigh 2 lbs. or more so that a constant and regular feed of filling is available. There's a stop motion for both warp and filling yarn.

The loom weaves natural fibers, including silk, and man-made fibers such as continuous-filament rayon and nylon, and spun rayon. A woman weaver is said to be able to run 10 looms, and over-all labor cost is reduced 25%. **Circle T-4 on Reader-Service Card**

Disk-Type Thermal Valves

A line of disk-type thermal valves has been announced by Spencer Products Group, Texas Instruments, Inc., 34 Forest St., Attleboro, Mass. Main applications are in controlling gas or liquid medium flow. Features are shock and vibration resistance, long cycle life, and fast response.

The valves are snap acting for instantaneous control of flow. They're also self-modulating for graduated control within a fixed temperature range.

They are compact and are completely immersible. In addition, they actuate mechanically to thermal sensitivity and thereby eliminate the need for electrical circuits.

By responding to changes in temperature, the bimetal disk transmits its overcenter force mechanically to open or close an orifice rather than to make or break an electrical circuit. Therefore, as servo valves, they cause the main control valve to open or close on signal in response to temperature and/or pressure change. **Circle T-3 on Reader-Service Card**

Static Control

A line of compact, color-coded, static-control components has been announced by Square D Co., 4041 N. Richards St., Milwaukee 12, Wis. Called Norpak, the static system is based on the transistor Nor unit.

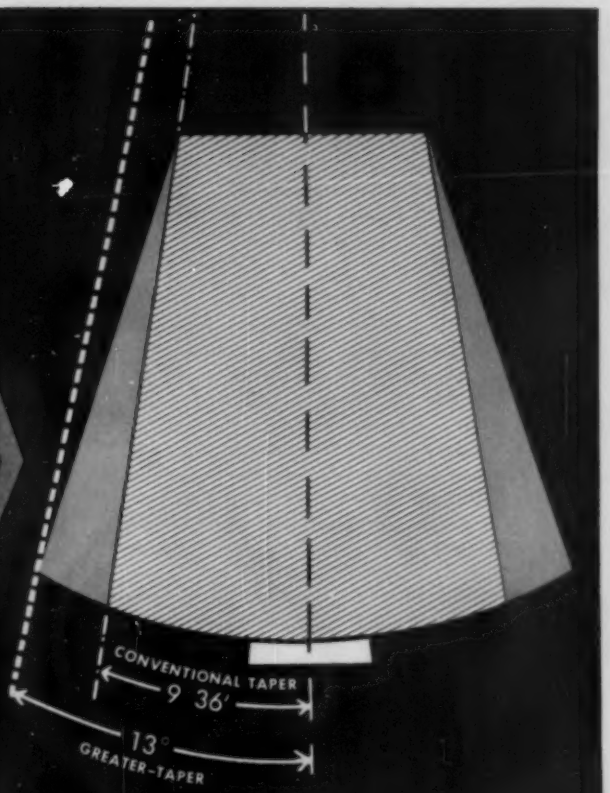
All logic functions can be accomplished with this single unit including: and, or, not, and memory. It's easy to apply to conventional circuits, and up to 25,000 switching rates are provided per second.

Logic elements are packaged in space-saving modules and are capsulated for resistance to shock and environmental conditions. Components can be purchased separately in 6 or 20 packages and can be applied as desired without regard to phase sensitivity. Tapered-pin connections assure positive external circuits.

The system is available in completely engineered systems ranging from the smallest to the largest panels. Optional monitor lights give visual indication of proper performance, and a simple dynamic sequence-tester checks individual units in operation. **Circle T-5 on Reader-Service Card**

THE FOSTER *GREATER-TAPER* CONE...

Why Knitters Need It



If you sell spun knitting yarns, or if you are a knitter and do your own winding, you *need* the Foster Greater-Taper Cone, produced on the Foster Model 102.

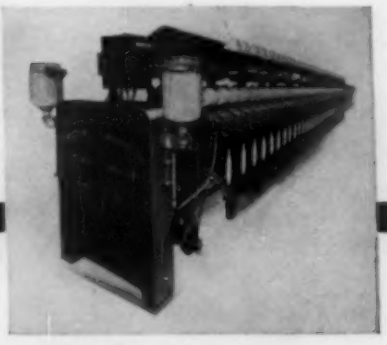
This is because Foster Greater-Taper Cone delivers freely with minimum drag at the knitting machine and thus prevents tight loops and even at times prevents breaks.

It's all a matter of clearance of yarn when the cone is full. Note in the illustration that the yarn does *not* clear the nose of a conventional 9°36' cone, but that it *does* clear the nose of the Foster Greater-Taper Cone, with room to spare, because the latter has a 13° taper, when full.

If you spin sale yarn, wind it on the Foster Model 102 and be prepared to supply the cone that knitters *need*.

If you buy yarn on cones ready for the knitting machine, insist that the cones be Foster Greater-Taper Cones and thus protect the quality of your fabrics.

THE FOSTER MODEL 102 WITH YARN CONDITIONING ATTACHMENT



ATMA
American Textile Machinery Exhibition - International
Parade of Progress

553-9

FOSTER MACHINE COMPANY

A Yarn Winder for Every Purpose

Westfield, Massachusetts, U.S.A.

SOUTHERN OFFICE — Johnston Bldg., Charlotte, N. C. • **CANADIAN REPRESENTATIVE** — Ross Whitehead & Co., Ltd., 2015 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ont. • **EUROPEAN REPRESENTATIVE** — Muschamp Textile Machinery (Sales) Limited, Eider Works, Wellington Road, Ashton-under-Lyne, Lancashire, England.

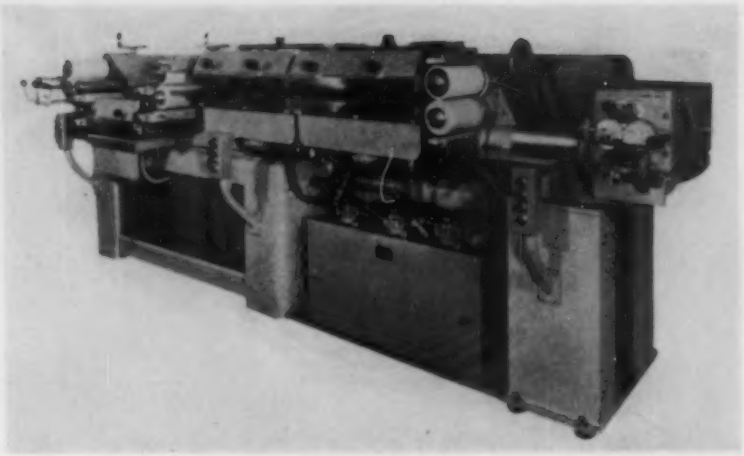
Tow-Processing Machine

A tow-processing machine that takes the place of three conventional machines now being used by fiber producers has been announced by Turbo Machine Co., Lansdale, Pa.

The machine combines the operations of drawing frames, conditioning machines, and crimpers.

Undrawn thermoplastic fibers are made ready for cutting in a single operation.

Other advantages claimed include the production of higher-tenacity tow with lower elongation and uniformly excellent fiber qualities. **Circle T-6 on Reader-Service Card**



Lace Machine

A lace machine that's 148 ins. wide and runs 230 rpm. has been developed by William Hooton's Ltd., Great Eastern St., Nottingham, England. The machine has a welded-steel framework.

Roller bearings and ball bearings are used at many places, and automatic lubrication meters about 50 machine points.

The machine is controlled by push buttons and has an improved automatic safety stopping device.

Machine parts are designed so that most maintenance can be done over the week end. The bearing strips of the comb bar are of long-wearing plastic and are made in small easily detachable sections so that a worn part is easily replaced. **Circle T-7 on Reader-Service Card**

Carpet-Printing Machine

Carpets may be printed in all-over patterns without crushing the pile by a machine developed by British Tufting Machinery Ltd., Whitebuck Drive, Blackburn, Lancashire, England.

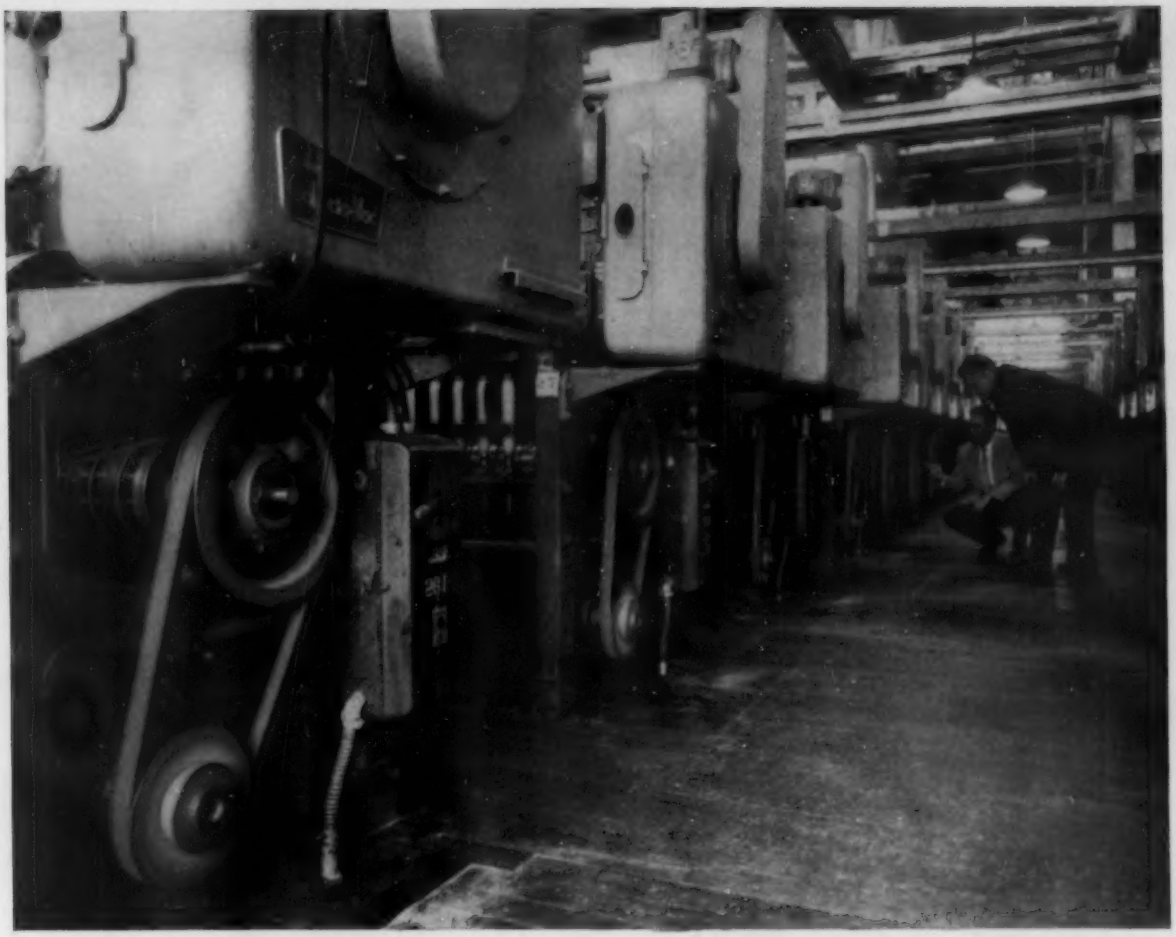
Color is transferred to the carpet by a roller that has a raised design made of a spongy material.

The printing roller is furnished with color as it dips in a bath of dye liquor. A squeezing effect is produced by a second roller that is mounted at the bottom of the color pan. As the design roller rotates in the liquor, it is first squeezed, then released at the liquor-air interface; so it becomes charged with color.

Air jets remove any bubbles that may have formed; and as rotation continues, the color-charged design is pressed against the pile of the carpet, which is fed into the machine face down. A second roller mounted over the carpet can be adjusted to exert any wanted pressure.

The machine will print loop or cut-pile carpeting with well-penetrated, clean-cut designs.

Production is from 1 to 15 yds. per min. according to the finishing equipment. Machines of 12-, 15-, and 18-ft. widths are now being built that will print one, two, or more colors. **Circle T-8 on Reader-Service Card**

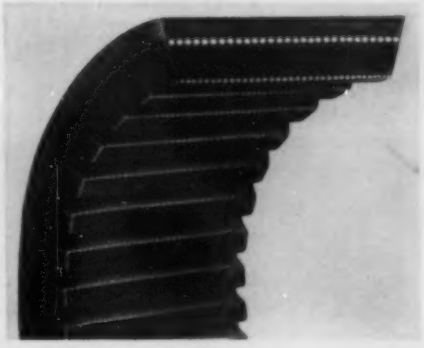


Cut downtime on spinning frame speed changes up to 70%

Dayton Variable Speed Drives

Want to effectively increase the daily production of your present belt driven spinning frames? In many instances, by changing over to a Dayton Variable Speed Drive, your textile mills can *cut downtime* on speed changes as much as *70%*, for a bonus of *25 to 30 minutes extra production time* on each change.

To maintain desired speed ratios with utmost accuracy the Dayton Variable Speed Cog-Belt® embodies extreme crosswise rigidity to prevent crushing or distortion. Special transverse fibres maintain accurate cord alignment at all times for uniform distribution of V-Belt load and long service life.



Dayton's exclusive cog design provides maximum flexibility for bending around small sheave diameters without damaging belt. Another exclusive construction feature, molded raw edges, assures a positive rubber-to-metal grip for the life of the belt.

Look under Belting in the Yellow Pages for the name of your nearest Dayton Distributor, or write:

®Registered T.M. The Dayton Rubber Company
©D.R. 1960

INDUSTRIAL DEPT

Dayton Industrial Products Co.

2001 Janice Avenue Melrose Park, Illinois *A Division of The Dayton Rubber Co.*

Condensate Control

Higher production from dryers with less steam consumption is claimed for a condensate control system developed by Southern Machinery Co., Charleston 24, W. Va. Basically, the unit is a differential pressure control. A third control point is used to reset the control point in proportion to the density of the condensate vapor leaving the heat exchanger to which the control is applied.

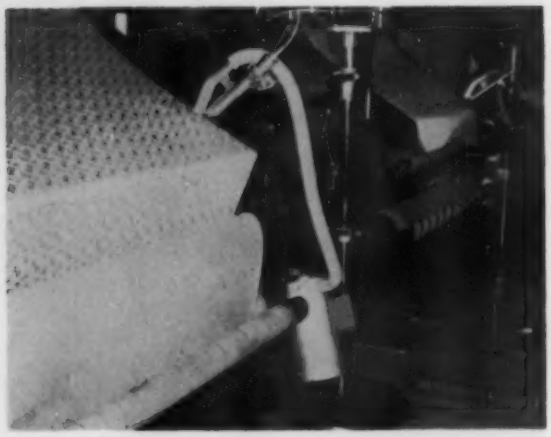
In operation, condensate impinges on a pitot tube installed between the condensate inlet and outlet points. The liquid pressure is transmitted to the low side of the controller diaphragm and balances out the tendency of the diaphragm to actuate the valve in the condensate-return line.

When all condensate is blown out, reduced pressure on the pitot tube permits actuation of the shutoff valve in the condensate return line. **Circle T-9 on Reader-Service Card**

Glass-Fiber Equipment

Many types of tanks, pad boxes, trucks, and buckets made of resin-reinforced glass fiber are available from Parks & Woolson Machine Co., Div. of Riggs & Lombard, Springfield, Vt. Standard items are kept in stock, and special shapes and forms for individual purposes can be fabricated to order. **Circle T-11 on Reader-Service Card**

Selvage Trimmer



Loose threads and fabrics loops can be trimmed by a machine offered by Tek-Matic Sales Co., 1274 Hastings St., W. Englewood, N. J.

Both single and double units are available; the latter are particularly suitable for multishuttle-loom goods.

The trimmers will operate at up to 100 yds. per min., and all clippings are deposited in a container.

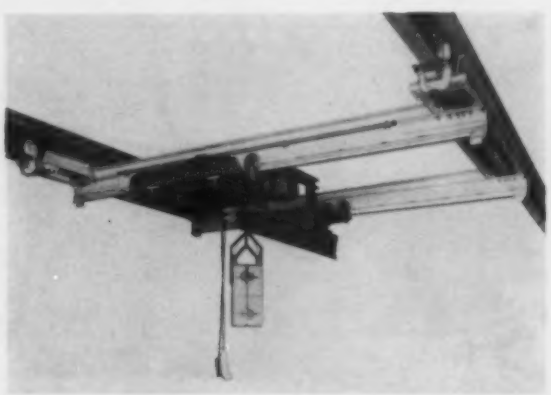
Adjustments are simple, and blades and guards are interchangeable for various types of fibers. The trimmers may be mounted on examination machines. **Circle T-12 on Reader-Service Card**

Crane Bridge for Hoists

To solve head-room problems at low ceilings or where loads must be lifted high to clear objects, American MonoRail Co., 1111 E. 200th St., Cleveland 17, Ohio, has developed a special hoist. The hoist is bracketed upward in a special carrier between two crane bridges with the bridges also mounted upward between the two crane ways.

In this way, the hoist hook is raised to the same level as the bottom flange of the crane bridges. The over-all head-room dimensions of the crane bridge and carrier are held to a minimum of less than 2 ft., depending on the span and capacity of the hoist.

Another advantage is that longer crane spans can be used. Drive units can be operated by hand chain or electric power. **Circle T-10 on Reader-Service Card**



DRAPER BRIEFS
NEWS OF INTEREST IN WEAVING

RETARDING LOOM OBSOLESCENCE

A steady flow of new Improved Repair Parts keeps mill weaving machinery up-to-date

Draper Corporation is continually improving parts and mechanisms for its looms. Year after year, scarcely a week passes without the introduction of another Improved Repair Part for one or more Draper loom models. These are all designed by Draper research and engineering staffs to keep present mill machinery competitive with our newest looms.

Each Draper Improved Repair Part is made for application to as many mill loom conditions as possible. Although they may be copied by others, the original design of these parts can be successfully accomplished only by the loom builder, for he alone has complete information on the various loom constructions in the field.

These Improved Repair Parts help to keep older looms operating profitably. They postpone the day when a mill must consider its looms to be obsolete.

What is an Improved Repair Part?

An Improved Repair Part is one so developed by Draper engineers that it can be applied, as far as possible, to all existing Draper looms in the mills. It is designed to give one or more of the following benefits:

1. Better service throughout a longer life than the original loom part
2. Easier installation with less down time
3. Better loom operation
4. Production of higher quality fabrics

How Improved Repair Parts are developed

Ideas for Improved Repair Parts originate from Draper engineering and manufacturing departments, Construction Committee members, Draper sales and service men, recommendations of material suppliers and, frequently, from suggestions by mill superintendents, overseers, and loom fixers.

Usually extensive "mill trials" are conducted, whereby a new part proves itself in actual weaveroom operation, before it is offered for sale.

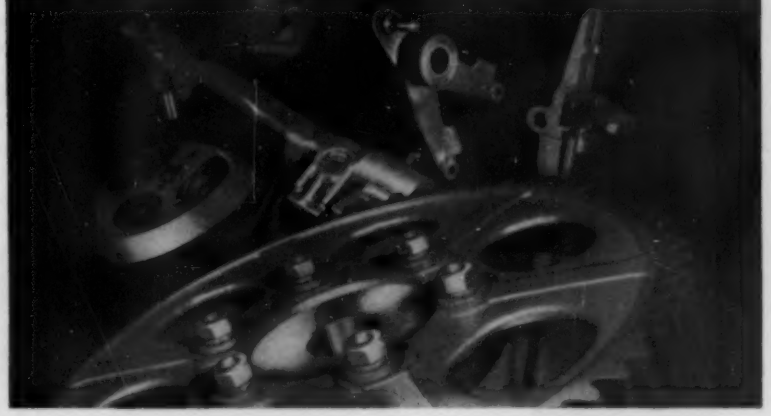
Although Improved Repair Parts are designed to replace older parts, mills often use both old parts and new Improved Repair Parts simply because supply room bins and records are set up for ordering both. Generally the older number could be eliminated to advantage.

Why Draper Parts are best for Draper looms

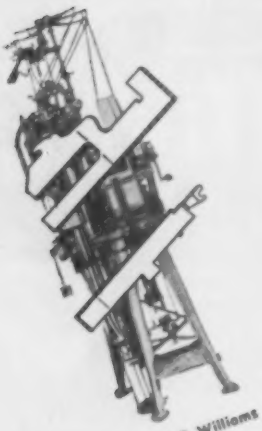
Uniformity of parts is necessary for successful standardization in setting loom mechanisms to gauge. Worn or poorly fitting parts just cannot be set to gauge. Competitive mills know that only with the best loom parts available can they get uniform and accurate settings, that *only with gauged settings can they get maximum production, lowest weaving costs and highest cloth quality.* These mills are first putting their looms in top condition and then running them with correct and standardized settings.

In such a planned program, differences in initial cost of repair parts are often found to be of least importance. More and more mills are using Draper parts *exclusively* to maintain their weaving machinery at highest competitive standards. Draper parts are made from the same metal mixes as original parts furnished with the loom. They are finished to master overall gauge dimensions available only to the loom manufacturer. Draper Improved Repair Parts fit Draper looms and each other better; as a result, they are dependable and last longer. Correct engineering design, selection of proper materials and use of economical manufacturing methods are determined for each Draper part by a competent knowledge of their effect upon *total loom operation.*

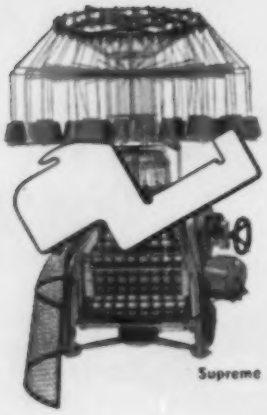
You can find out more about Improved Repair Parts from your Draper Improved Repair Parts Catalog, from Draper sales and service representatives, or by writing to Draper Corporation.



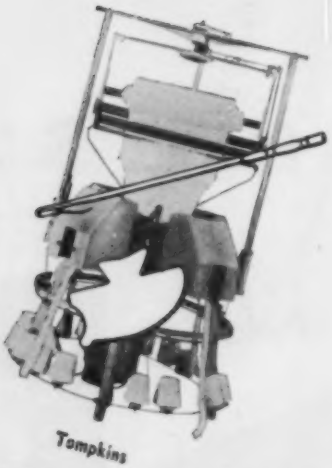
DRAPER CORPORATION • HOPEDALE, MASS.



Scott & Williams



Supreme



Tompkins

Excellence Doesn't "Happen" — It is *PRODUCED*

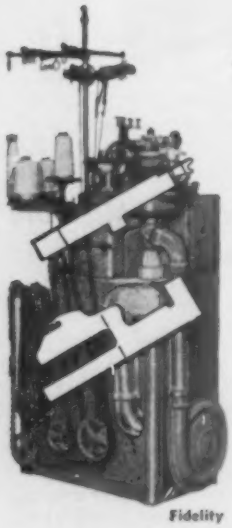
Here at IVES, we never leave anything to chance. For 89 years, the finest steel, expert craftsmanship and infinite care have gone into the manufacture of every needle and knitting machine part that has left this plant.

That is why IVES' products have always been known for their excellence in design, workmanship, and wearability.

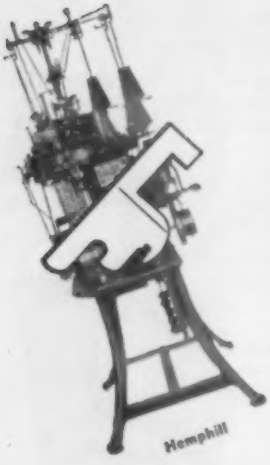
IVES' replacement parts are tailored to fit *exactly* the machines for which they are intended:

Supreme • Fidelity • Tompkins • Kidde
Cooper • Brinton • Wildman • Crane
Banner • Scott & Williams • Bentley • Reiner

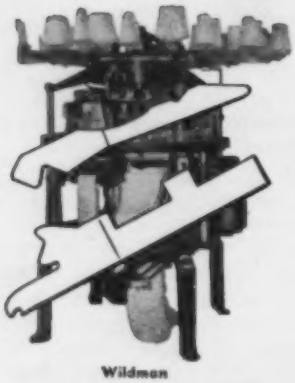
THE LOYAL T. IVES COMPANY, INC.
NEW BRUNSWICK, N.J.



Fidelity



Hemphill



Wildman

Bentley

Bobbin Carrier Improves Doffer Efficiency

We used to have trouble in placing empty bobbins on the spindles after doffing. Frequently, they fell on the floor and were battered by the trucks we formerly used to haul them in. Also, there was a problem of storing them until needed.

We solved the problem by building a bobbin carrier from lightweight perforated metal that hooks on the spinning frame and slides along the rail as shown in Photo A. Size of the box depends on the lift of the frame and specifications of the bobbins to be handled.

We found that the average operator could handle about 200 warp bobbins or 500 filling bobbins for our frames that have an 8-in. lift. The carrier can be moved easily along the rail with one hand.

Storage bins were built alongside of one wall as shown in Photo B. When a new load of bobbins is needed, the carrier is removed from the rail and slipped into one of the full bins, where it automatically loads itself. Edges of the compartments are rounded to prevent damage to the carrier or bobbins during the loading operation.

We find that this system reduces labor cost, keeps bobbins off the floor, and prevents damage to bobbins. Our doffers like the arrangement very much. (K-260) *M. Ali M. Erfan, Alexandria, Egypt*

A

B

Card Clothing Lasts 5 Years As Loom Take-up-Roll Cover

We weave light and heavy worsted and woolens at our mill. We formerly had a lot of trouble with our take-up-roll covers because chemicals used to treat the raw wool deteriorated the covers.

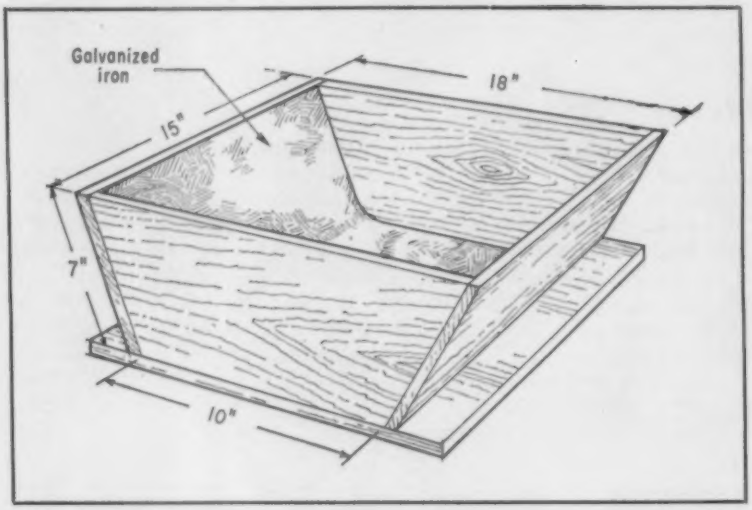
We solved this problem by covering all our rolls with card clothing. This cover is put on under tension, but no glue is used. We fasten the covering at each end of the roll with machine or wood screws.

Before we put the cover on, we sprinkle chalk or graphite lightly over the roll to prevent rust.

But we take great care to see that the teeth of the clothing are pointing in the right direction.

This cover holds the fabric well and lasts 5 to 10 years. (K-3981) *W. Rothschild, Colmar, France*

We Use a Trough For Long Pattern Chains



We have quite a few long loom pattern chains of about 150 bars that are too long to run on the floor and too short to bother putting up racks.

A trough was made to hold the bars and is placed on the floor under the dobby. The trough can be screwed down if needed. The sides of the trough are made of ⅞-in. boards, and the bottom is lined with galvanized sheet metal. (K-3095) *Gaston R. Corrinet, Pittsfield, Mass.*

Sturdy Brush Can Be Made From Old Card Clothing

We used to wear out a lot of brushes in our mill, especially in the warehouse and dyehouse where the floors are cement. In other areas, oil on the floors tended to cause rapid deterioration of bristles.

We cut down on brush wear greatly by making special-purpose brushes from old card clothing. Napper clothing also makes a good brush.

We made the brushes by tacking strips of card clothing on a board 6 ins. wide and 30 ins. long. A broom-handle holder was screwed on the back of the board, and a handle was inserted.

Brushes made this way are the best we've ever used, and they never seem to wear out. (K-209) *Raynold Lobbe, Biddeford, Me.*

$25 KINK WINNER

The $25 prize for the best Kink in February was won by:

D. L. Garrett, S. Boston, Va., for his Kink "How to Draw-In Drop Wires."

Machine Parts To Be Welded Can Be Held With Metal Glue

When small machine parts have to be welded together, they are commonly held during welding with wires or clamps. But there's an easier way.

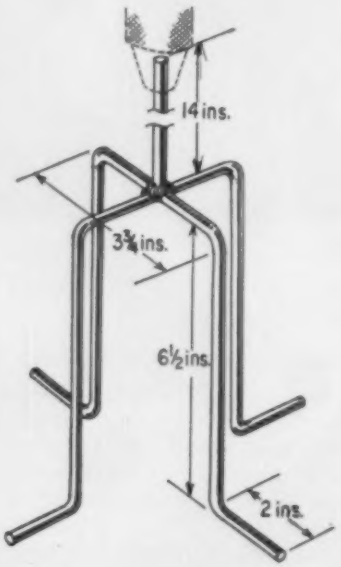
Glue the parts together with metal glue. Then when they dry, they can be held in any desired position while they're welded together. And in this way, clamps do not interfere with the job. (K-3945) *W. E. Warner, Essex, England*

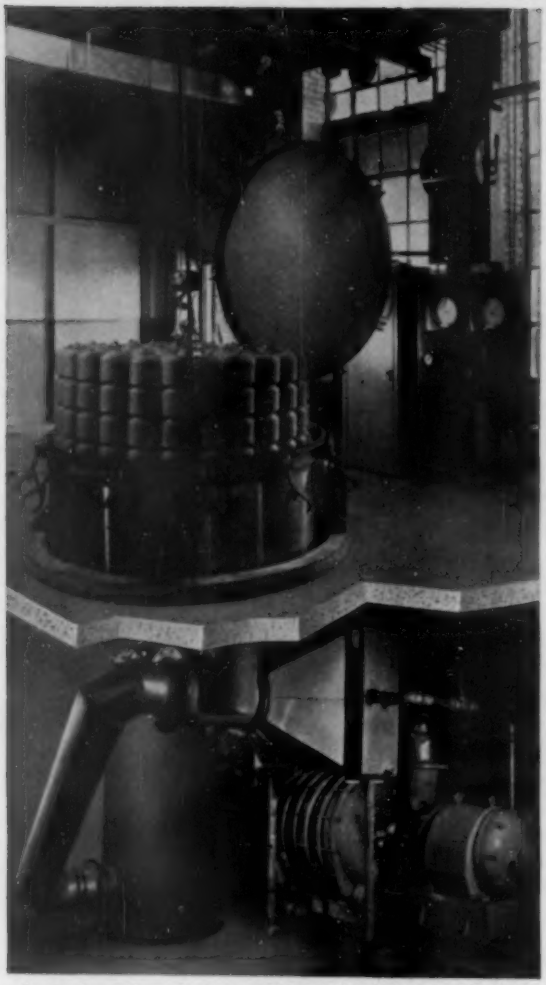
Portable Cement Mixer Mixes 2 Gals. of Cement Quickly

When only a small amount of cement has to be mixed, you can mix it easily and quickly in a 5-gal. paint can with the homemade agitator shown in the sketch. Make the tool from three ⅜-in. steel rods.

Heat two of the rods, and bend them as shown. Make all bends at 90°. Then cross the rods at their centers, and weld the straight rod 14 ins. long at the crossing position.

Fasten the shaft of the mixer in the chuck of a ½-in. portable electric drill so that the drill turns the mixer. It mixes up to 2 gals. of cement at a time. (K-235) *Jerry Thomas in the Lincoln Stabilizer*





Composite photograph of one of the recent installations of the Turbo Extractor-Dryer. Equipment in basement occupies space 11 x 11 feet.

1/2 the cost... 1/2 ...the space

with the new TURBO recirculating-type extractor-dryer

Regardless of how you extract and dry packaged yarn, the same energy is required. Why settle for half as much drying for the price? Figure your savings when the equipment costs one-half the price, and occupies one-half the space. Bulletin on request.

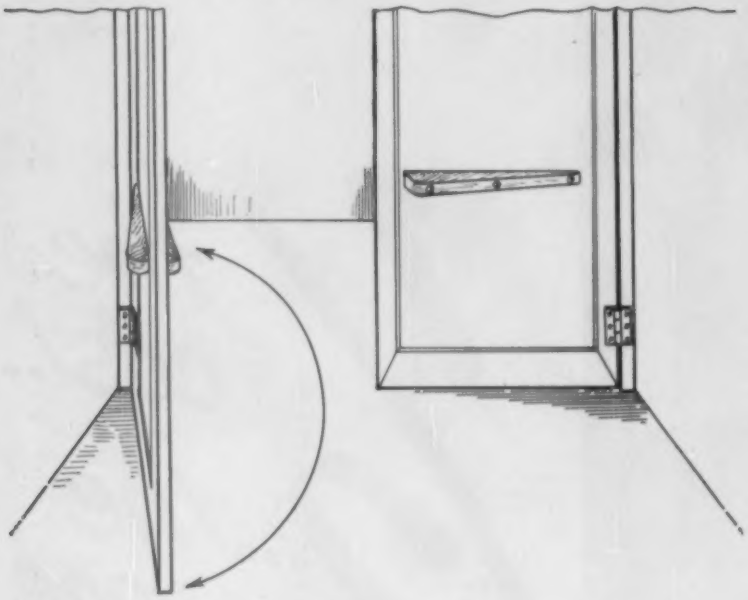
TURBO

... a family of engineered machines

TURBO MACHINE COMPANY, LANSDALE, PA., U.S.A.

CIRCLE 127 ON READER SERVICE CARD

Replaceable Wood Bumpers Protect Doors from Trucks



In our mill, we have swinging double doors between departments so that employes who roll trucks of sliver, yarn, and fabric can push their trucks through the doors without stopping to open them. But this practice damages the doors severely, and repairs have to be made frequently.

We have all but eliminated these repairs by making replaceable hardwood bumpers for both sides of the doors. Each bumper is 2 ins. thick. The sides are 4 ins. wide at one end and are tapered to 1 in. at the other end as shown in the sketch.

Each bumper is held to the door with three carriage bolts, which reach all the way through a second bumper on the opposite side of the door. The bumper is countersunk for the nut so that the bolt threads aren't battered by the trucks.

When a bumper has to be replaced, three bolts are removed and a new bumper is bolted on. In this way, one bumper that isn't struck often can outlast several others that receive harder service. (K-3414)

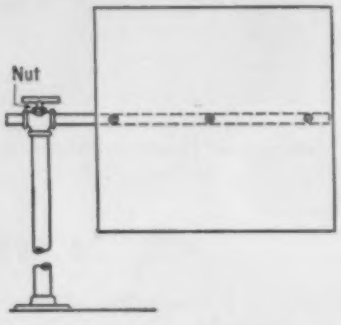
Use Medicine Dropper To Oil Take-up Rolls

We used to have a lot of trouble getting the right amount of oil in the oil hole on the take-ups of our knitting machines. Overfilled holes permitted oil to seep out and get on the rolls. This condition required wiping off the machine, or oil spots would show up in the fabric and cause seconds.

We stopped overoiling by instructing the oilers to use a medicine dropper graduated in drops for this job instead of the regular oil can. Exactly two drops are now put in each hole, which is just the right amount for our machines.

Use of the dropper has virtually eliminated oil spots in our finished fabrics, and seconds have been substantially reduced. (K-205)

Adjustable Perch Simplifies Extra Inspection



When we get a few pieces of goods that need special inspection for one reason or another, we run them over a perch like that shown in the sketch.

The tilting-top feature is valuable because it makes it possible to inspect goods from various angles and under different lighting conditions.

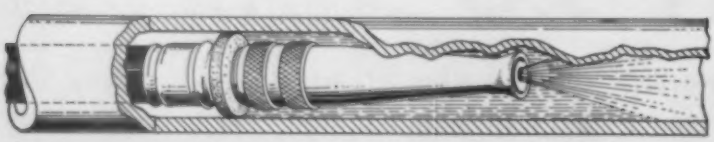
To make the perch, bore a 1⅛-in. hole in the top of a 2-in. pipe tee and weld a 1-in. nut over the hole. Use a 1-in. bolt for tightening the table support after it is inserted in the pipe tee. For extra leverage, braze a 6x½-in. rod on top of the bolt. The pipe tee is screwed on top of a 4-ft. length of 2-in. pipe that is bolted to the floor as shown. (K-272)

Gasket on Hose Helps Clean Clogged Pipes

We had a lot of trouble with clogged pipes in our laboratory drains that usually required the services of the plant pipe-fitting crew.

Now we keep a length of garden hose in the lab, fitted as shown in the sketch with a disk of ⅛-in. gasket material. The disk is threaded on just back of the nozzle and should be cut slightly larger than the pipe diameter so that a snug fit is obtained.

When full water pressure is turned on the hose, the pipe is flushed of any movable material. (K-221)



See them in operation at the

ATMA SHOW

Atlantic City
May 23-27

BOOTHS 478-81

Use any of these beams on this Versatile Warper

The versatile Kidde-Sipp Warper Model 149B is built to take a 50" beam, up to 32" in diameter—BUT it can quickly be converted to take a 42" beam, or even two 25's or two 21's.

If you don't need this flexibility, of course, you can get Model 149A. This warper can be furnished to accommodate either a 50" or a 42" beam.

Both models are dependable and sturdy, as are all Kidde-Sipp warpers.

Here are some other features of Kidde-Sipp Model 149 Warpers:

- Speed range is 8 to 1 (75 to 600 YPM).
- Electric brakes have independent rheostats for synchronized stops.
- Pressure roller and diversion roller are synchronized by a timing belt.
- You can choose either a fan reed or a positive expansion reed.
- Hydraulic action makes beam doffing work a girl can do single-handed.
- Beam tape attachment helps keep ends set in position.
- You get predetermined revolution and yardage counters.

The Model 149 is part of a line of dependable Kidde-Sipp Warpers. We'll be happy to supply you with detailed folders, which describe every warper we have. Write to Kidde Textile Machinery Corp., Bloomfield, N. J. Or phone Mr. Ruddick at PIlgrim 8-8100 in Bloomfield.

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

Kidde TEXTILE MACHINERY CORPORATION — BLOOMFIELD, NEW JERSEY

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

CIRCLE 129 ON READER SERVICE CARD

Screen Shield for Chisel Protects Eyes From Injury

There's always danger that metal chips cut with a chisel from bolts and other objects may hit you in an eye. But a shield made from a piece of screen wire will eliminate this danger.

To make the shield, cut a circular piece of screen 6 ins. in diameter and punch a hole in the center just large enough to clear your chisel.

Put a rubber washer about 4 ins. from the chisel point, slip on the screen, and secure the screen with a second rubber washer. With this shield, the part to be chiseled is clearly visible but all flying chips are deflected away from you. (K-3965)

Hole Through Picker Stick Holds Fibre Strip Securely

When a fibre strip is fastened to the picker stick on a drop-box loom to protect the stick from abrasion, the screws to hold the fibre come loose; and if the screw is tight enough to hold, the picker stick splits.

We have overcome this trouble by drilling a very small hole all the way through the picker stick. Then we bore a larger hole part of the way through the small hole to hold the screw. In this way, air behind the screw that is ordinarily compressed escapes through the hole and the screw holds tight. (K2992) *Charles S. Bicksler, Lancaster, Pa.*

Eyeglass Frames Hold Magnifying Glass

Knitting-machine fixers often need a magnifying glass when they are working on small jobs such as looking for a broken needle in the cylinder or dial. Often it is difficult to hold the glass in one hand and work with the other.

This situation can be remedied by removing the lenses from a pair of discarded eyeglasses and inserting in their place a magnifying glass from a stitch glass or other source. If the glass doesn't fit the frame, which it probably won't, cellophane or friction tape can be used to bind it in. (K-3865)

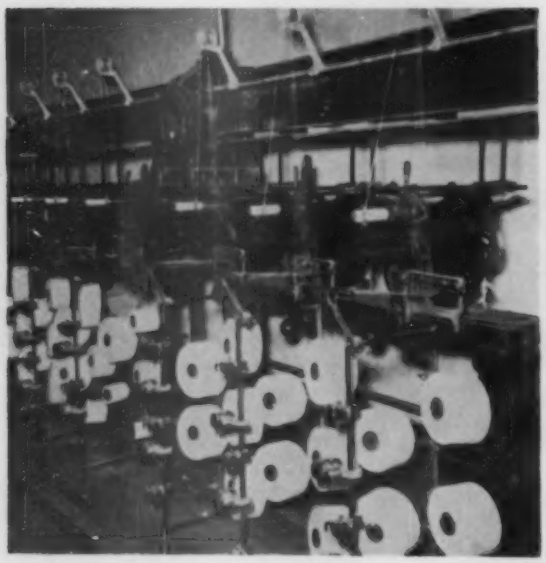
Supply Shelf Increases Winder-Operator Efficiency

We formerly wound all of our single yarn from cheeses and wound ply yarn from 8-in. cones at our multiple-end winder as shown in Photo A. Facilities for storing cheeses were limited, and the aisle wasn't wide enough for the winder operator and supplier to work at the same time without interfering with each other.

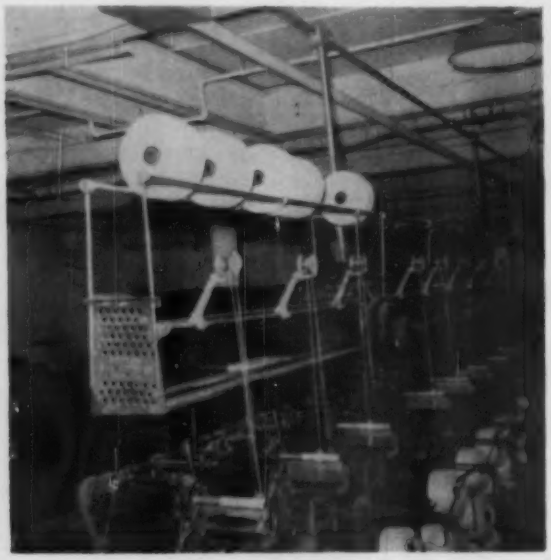
To overcome these difficulties, we made some changes as shown in Photo B. Two parallel chrome-plated rods were mounted over the standard storage shelf. These rods cost us nothing since they had been discarded from our spinning frames when new creels were installed.

Our regular supply shelves are mounted on 14-in. posts for adjustment purposes. The new rods are 6 ft. from the floor, and there are cross trusses at 4-ft. intervals to keep the rods from spreading under weight.

This simple change has given us additional storage space; yarn is no longer lying in lint; the supplier can work from the back of the frame without interfering with the operator; and the original supply shelf can be used to store empty tubes. The improvement has greatly increased our operator and supplier efficiency. (K-248) *Kirby A. Wright, Edenton, N. C.*



A

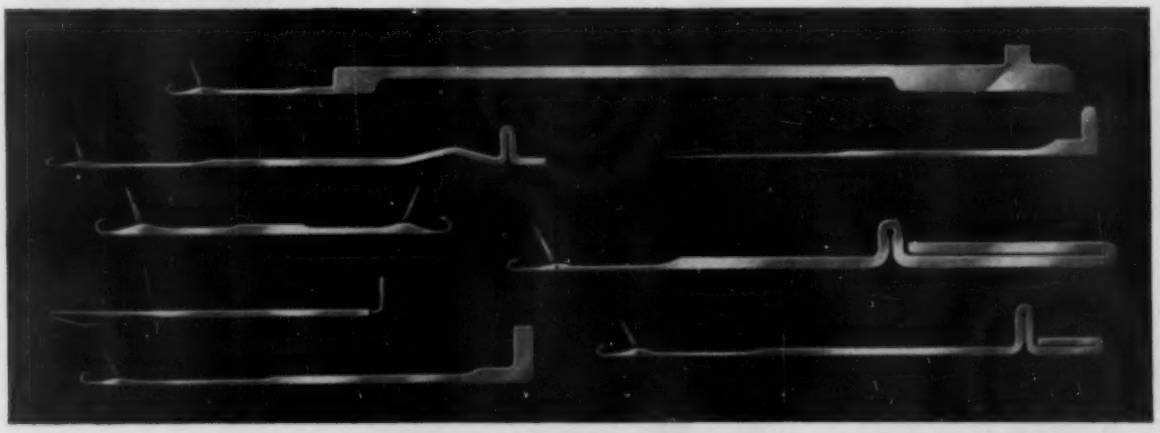


B

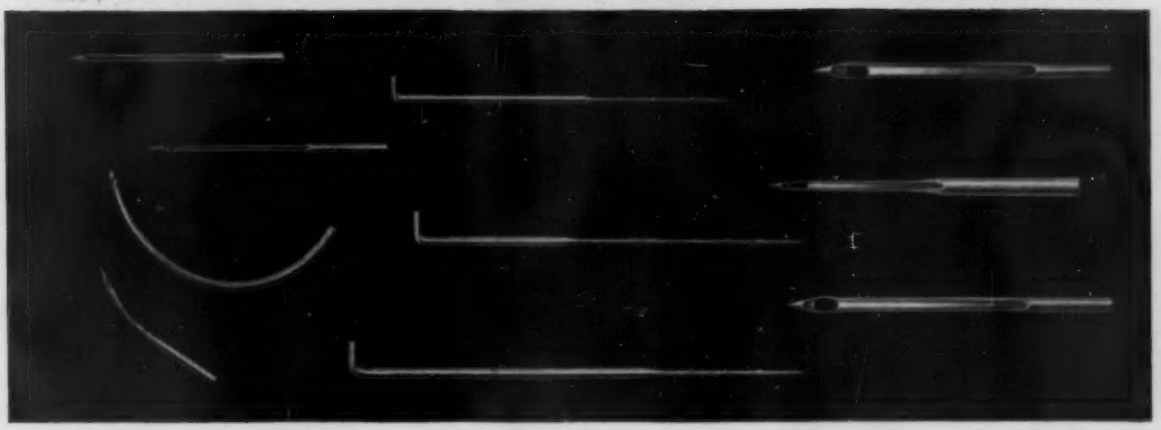
DON'T FORGET...

whatever your machine needle requirements, Torrington can supply you promptly, from conveniently located branches, with the right needles.

FOR KNITTING



FOR SEWING FOR FELTING FOR TUFTING



THE TORRINGTON COMPANY

Established 1866

Torrington, Conn., U.S.A. • Bedford, P.Q., Canada
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Branches to serve you are located in: New York • Philadelphia • Chicago • Boston • Greensboro, N.C. • Atlanta • St. Louis • Toronto, Ontario, Canada
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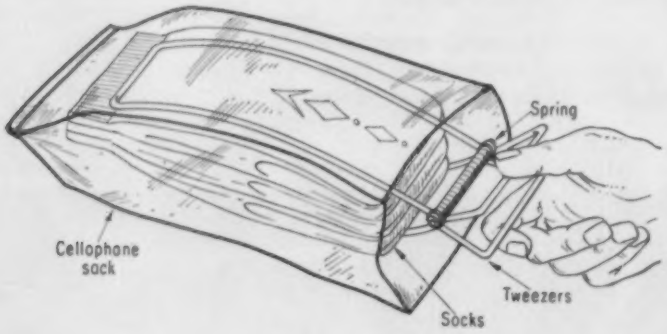
TORRINGTON MEETS EVERY NEEDLE NEED: SEWING · KNITTING · TUFTING · FELTING

Tool Makes It Easy To Package Socks

At our mill we recently started packaging three and six pairs of socks in cellophane bags. The operation was tedious and time-consuming since we had no machinery to do the job.

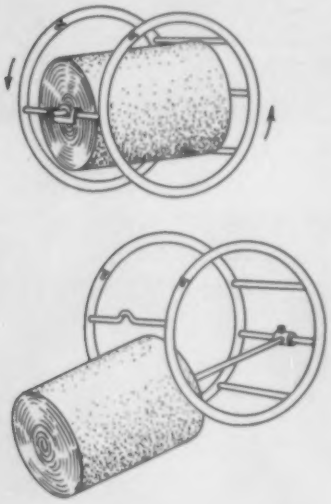


We cut packaging time in half by making a tool from stiff wire that operates like a pair of oversize tweezers. The wire is bent as shown in the sketch, and the two arms are connected scissors-fashion to a spring that holds them closed.

To use the tool, a group of socks are grabbed at the rib tops and inserted smoothly into the bag. The handle is then squeezed and the tool is removed. The whole operation takes about 3 secs., and the socks go smoothly and easily into the bag. (K-219)

Novel Reel Can Move Heavy Rolls

Where space is constricted and other mechanical equipment is not available, a reel made like that shown in the sketch is of big help in moving heavy rolls in our warehouse. Make the wheels of pipe or round stock, and space them just far enough apart to accommodate the largest roll of goods. The diameter of the reel should be somewhat greater than the width of the widest goods to be handled.



Spacers should be made of 1-in. pipe. The spacer that serves as a support for one end of the roll should be made with a yoke as shown so that the axle can be easily inserted or withdrawn. The open end of the yoke can be closed with a simple bolt when necessary.

This axle support should also be mounted in slots in the rims of the reel to facilitate loading and unloading. (K-3848)

End Stick Is Frayed To Remove Waste Fibers

Knitting-machine stop motions are cleaned with compressed air, which removes most of the loose lint from the equipment. But there are accumulations that the air does not remove, and from time to time this lint has to be removed by hand. This manual cleaning requires climbing up to the stop motion.

We have cut out this climbing by making a small brush at the end of the end stick that is normally used to thread the stop motion. The end stick is trimmed down to a pencil-point sharpness, and the point is bruised until the fibers separate and form a small brush. With this brush, it is an easy matter to twist the fibers out of the stop motion. The other end of the stick can still be used for the threading operation. (K-3916)

Emery Cloth at Breastbeam Stops Cloth Defects at Loom

When the glass rod in the breastbeam of a multishuttle loom comes loose and creeps around as the cloth takes up, abrasion marks are made on the under surface of the fabric lengthwise of the cloth. In addition, wavy cloth is made as the rod creeps and then stops intermittently.

To correct these cloth defects, we move the lay forward with the reed against the fell of the cloth. We slacken the cloth by turning the handwheel for the Cheney ratchet.

Then we loosen the clamps on the ends of the rod and remove the glass rod from the breastbeam. We soak the hard glue off the glass rod with water and also remove the hard glue from the breastbeam.

We put new glue in the recess in the breastbeam and replace the glass rod in its original position.

Before we replace the clamp fasteners, we fold a piece of emery cloth so that the metallic surface is outside on both sides. This folded piece of emery cloth is just long enough to reach between the two screws that hold the clamp. We retighten the screws to hold the emery cloth.

The loom is left stopped for about 15 mins. to let the glue set. Then it is restarted. (K-106)

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Europe's Largest Manufacturer of Worsted Machinery

MODEL PS COMB

WE WILL SHOW THE FOLLOWING MACHINES AT ATLANTIC CITY BOOTHS NO. 1312-15, 1223-26

1. Our NEW Rectilinear comb, Model PS, combing wool at 160 nips per minute.
2. The PS comb processing synthetic staple at 175/minute.
3. Our NEW High Speed Gill Box with Automatic Evenness Regulator.
4. Our NEW High Draft Finisher Rover with Rub-Apron Delivery.

VISIT US AT THE SHOW, WRITE US, CALL US FOR COMPLETE DETAILS ON THESE AND ANY OTHER MACHINES FOR PROCESSING WOOL AND LONG STAPLE SYNTHETICS.

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ATMA

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CIRCLE 133 ON READER SERVICE CARD 133

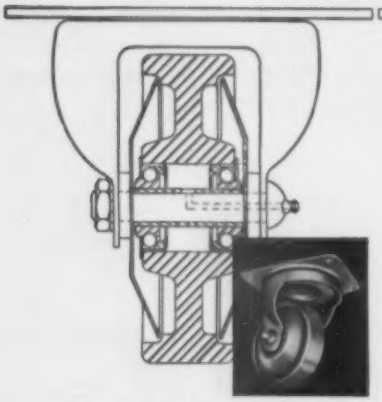
ACHIEVED!

Textile Casters That Won't Bind!

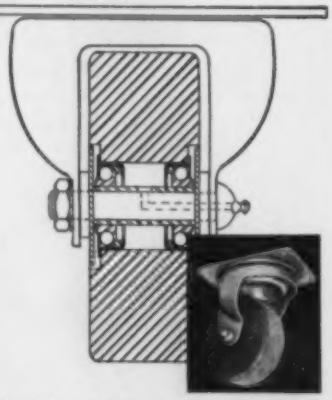
FAIRBANKS TEXTILE CASTERS

Never Before Such Sure-Fire Protection Against Threads And Lint!

Available In 2 Wheel Types:

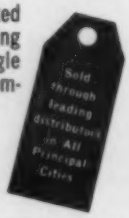


Precision cast, ballbearing semi-steel wheel—perfect concentricity; smooth, thick tread and big tread edge radius — protects floors and rolls and swivels easier. Threadguard protects in two directions: vertically, by tight fit to concentric inner edge of wheel tread; horizontally, by tight fit to molded step on web of wheel. Spacer washer, between threadguard and caster leg, eliminates V trap—allows lint and thread to fall free or, if caught, cleaning out without removing wheel. Available in 4 and 5 inch sizes.



"LAMILON", All-Plastic, ballbearing wheel permits standardization on one wheel for any section of the plant. Protects wood and concrete floors, resists sticking of ring travelers and gives excellent service in bleacheries and dye houses. Tight flush-face threadguard has very close fit in machined recess in wheel. Flush-face design decreases chance of falling lint and thread catching in wheel. Spacer washer, between threadguard and caster leg, eliminates V trap—allows lint and thread to fall free or, if caught, cleaning out without removing wheel. Available in 4 and 5 sizes.

Fairbanks patented "LOCKWELD" Steel Swivel Casters have eliminated the king-pin — major cause of swivel caster failures — providing stronger, easier swiveling, longer lasting casters. Available in single ball race, regular duty, sizes 2 to 6 inch; double ball race, medium-heavy duty, sizes 3 to 8 inch, with matching rigid casters.



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NEW LITERATURE

TEXTILE MACHINERY & AUXILIARY EQUIPMENT

Crosrol web purifier — That can be mounted on a flat card to upgrade cotton and increase production is described in bulletin from Carding Specialists Co. Ltd., Pellon Lane Works. (F-1)

Card feeders—Type G-2 and G-3 Bramwell feeders for handling fibers of various lengths at a high rate of production are described in bulletin from Geo. S. Harwood & Son, Inc. (F-2)

Infrared ovens—That can be tailored for any finishing system are described in a bulletin that gives engineering data and advantages of the machines. Infra Red Systems, Inc. (F-3)

Knitting-machine flat parts — Are listed and described in catalog designed so that actual parts can be superimposed on full-scale illustrations to determine correct part number. Scott & Williams, Inc., Brinton Fabrics Machine Div. (F-4)

Vertical four-burner singer—That can handle two strands of cloth and a horizontal open-frame ribbon-singing machine for corduroys is described in leaflet from Birch Bros., Inc. (F-5)

"Production Sewing"—Is the title of an external house organ that contains news of the sewing industry, case studies of successful sewing operations, and information on new sewing equipment. Singer Sewing Machine Co. (F-6)

Stationary air compressors—Are described in a 24-p. bulletin that gives specifications and applications for three basic models of semiradially constructed units ranging from 1,385 to 1,948 cu. ft. per min. at 125 psi. Joy Mfg. Co. (F-7)

Air filters—Are described in a composite product bulletin that illustrates and gives engineering and installation data on a new line of permanent washable unit filters. American Air Filter Co., Inc. (F-8)

Drip-proof motors—That are multi-shielded against moisture, humidity, dust, oil, and chemicals are described in bulletin from Sterling Electric Motors, Inc. (F-9)

CHEMICALS & SUPPLIES

Pentachlorophenol — Used to treat cloth against rodent and insect attack is described in bulletin that gives properties and applications. Reichhold Chemicals, Inc. (F-10)

Starches and gums—Booklet describes line of products, tells the origin of the

raw materials, and lists numerous applications. Morningstar-Paisley, Inc. (F-11)

Itaconic acid and esters—Physical and chemical properties and formulas are discussed in several product information bulletins from Chas. Pfizer & Co., Inc. (F-12)

Fiber-labeling laws—Are discussed in 20 p. guidebook designed to help manufacturers avoid costly mistakes in complying with the law. Jackmeyer Corp. (F-13)

Tetrapotassium pyrophosphate — Used in the detergent industry because of its water softening, emulsifying, and dispersing qualities is described in data sheet that includes chemical analysis and physical-constant tables. Monsanto Chemical Co. (F-14)

Ketones—48-p. booklet describing Ketones as solvents and chemical intermediates and giving information on applications, coatings, formulations, and properties is available from Union Carbide Chemicals Co. (F-15)

Vinal fiber — Technical bulletin describes the development, application, and chemical and physical properties of vinal, formerly called vinylon, a new polyvinyl alcohol fiber. Air Reduction Chemical Co. (F-16)

50C metallic yarn — Is described in technical bulletin that gives information on mechanical and chemical-treatment processing. The yarn consists of a metallized polyester base protected on both sides by a plastic coating. Dow Chemical Co. (F-17)

Solvofen HM—A dyeing assistant and solvent for use in high-speed, continuous-dyeing operations where penetration of hard-twisted yarns and tightly-woven cloth is needed is described in bulletin from Antara Chemicals Div., General Aniline & Film Corp. (F-18)

Silicone products—A 1960 guide that lists all silicone products and covers their uses, benefits, and chemical and physical properties is available from General Electric Co. (F-19)

100 textile chemicals—Are described in a 44-p. booklet that discusses application, formulation, and physical- property data for their use in 41 textile-processing operations. Union Carbide Corp. (F-20)

ENGINEERING

Toggle and limit switches—Catalog describes and gives specifications for line of hermetically sealed, electrical-memory, rocker-actuated, and miniaturized switches. Technical bulletin covers a center neutral plug-in limit switch that can do the work of two separate limit switches. Micro Switch Div., Minneapolis-Honeywell Regulator Co. (F-21)

Electrical maintenance—Latest issue of "Maintenance News" carries articles on preventive maintenance for

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ATMA

Parade of Progress

ATLANTIC CITY, U.S.A. MAY 23-27, 1960

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NEW
Model H Ring Spinning Frame

Designed for impressive new strides in Quality and Low Cost Spinning

1 Production with larger packages, higher speeds, less downtime, less floor space. 16 listed Production features.
2 Preventive Maintenance with more sturdy mechanisms and structures. 22 listed 22 listed Preventive Maintenance features.
3 Safety with lowered frame (no more stepboard) and low voltage control circuits.

NEW
Fiber Blending Opener

to prepare stock blends for the Woolen Card.

Built on Sectional Frame Castings for Flexibility of Application
a) Davis & Furber ruggedness
b) variety of unit arrangements
c) T-slot Arch for adjustment and flexibility of Rolls

Three Cylinder Woolen
84" Card

Includes latest Model L refinements developed and proven during the past 10 years. Includes newest controls for continuous balance and check of Quality and Production.

NEW
Sliver Card

Two Cylinder, 60" width, All Metallic Wire Produces SLIVER FOR HIGH PILE KNITTING.

In first installation, comparative mill figures show more than *three times* Production of old Cards replaced on Synthetic Sliver.

NEW
Selectrite Napper

Designed for simplified control and application of energy: Push Button differential variable speed control allows infinite vernier adjustment of energy and registers on tach dials.

D&F Ring Spinning Frame and Three Cylinder Card; Daily Exhibition Operation Schedule; Inquire at D&F exhibit

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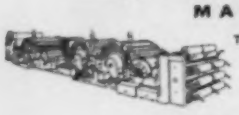
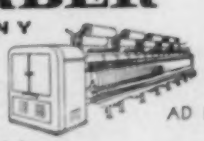


TEXTILE MACHINERY DESIGNERS AND MANUFACTURERS
North Andover, Mass.
Charlotte, North Carolina



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ACRYLIC FIBER

package-dyed by Globe

REACHES NEW HEIGHTS OF COLOR LOVELINESS

Garments made from "Orlon" 21—lively, resilient, with a natural, wool-like touch—take on a distinct new look of quality and elegance when good styling is coupled with superior yarn dyeing. Give your fashions the competitive edge of long-lasting beauty and sales appeal by specifying "Orlon" 21—package-dyed by Globe.

Globe does package dyeing on tubes, skein and warp dyeing, warp bleaching and sizing.

Yarns processed include cotton, worsted, linen, blend and novelty yarns, and all synthetics including Arnel®, Creslan®, Orlon®, and Zefran®.

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Globe DYE WORKS CO.

Since 1865

NEW LITERATURE Continued

motors, generators, resistors, and rheostats. Westinghouse Electric Corp. (F-22)

Drying systems — Booklet describes the development and application of drying systems manufactured by J. O. Ross Engineering (F-23)

Free slide rule—That simplifies the calculation of deflection of rolls under loads and shows the proper diameter of a roll for a given condition is available from Frank W. Egan Co. (F-24)

Corrosion control—Bulletin carries articles on coatings to resist water corrosion and on painting for severe exposures. Amercoat Corp. (F-25)

V-belt drives—36-p. booklet describes Ultra-V drives that are said to reduce over-all dimensions 50%, weight 25%, and cost 30%. T. B. Wood's Sons Co. (F-26)

Water treatment — Technical bulletin entitled "Instrumentation for Water Treatment Plants" covers a wide range of subjects including stepless regeneration, conductivity, pH control, panel boards, silica recorders, and solid-state controls. Graver Water Conditioning Co. (F-27)

Circuit breakers—Catalog provides information on molded-case circuit breakers, individually enclosed low-voltage power circuit breakers, and engineered products. Data include description, prices, selection, and application. I-T-E Circuit Breaker Co. (F-28)

Sprockets—56-p. bulletin describes roller-chain and Taper-Lock sprockets. Illustrations show construction details and emphasize the ease of mounting. Selection data and prices are included. Dodge Mfg. Corp. (F-29)

Ball bearings—Two new series of bearings, one with inch dimensions and the other with metric dimensions, are described in bulletin that gives size, load, application, and other data. Hoover Ball Bearing Co. (F-30)

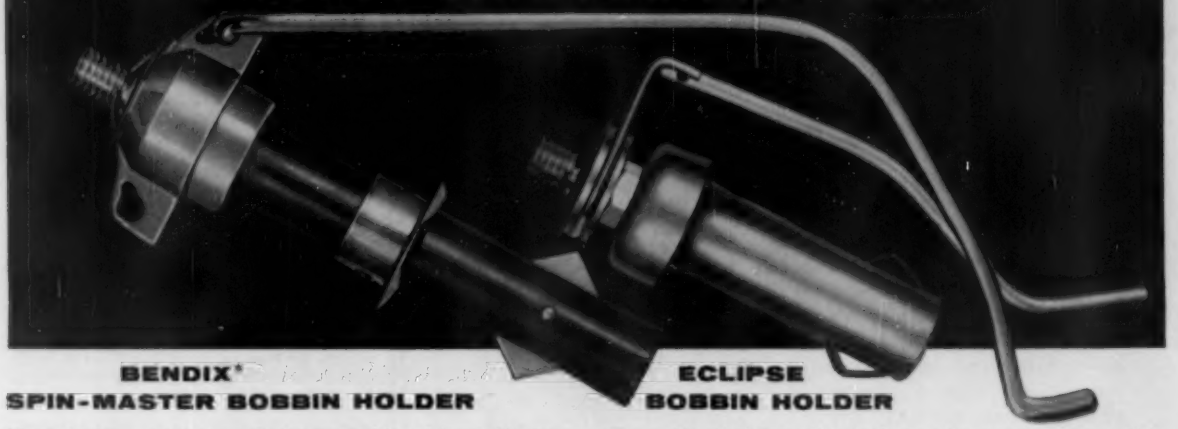
Handling cost cut 50%—At U. S. Rubber Co.'s Winnsboro, S. C., plant by the use of materials-handling equipment; details given in case-history bulletin from Lewis-Shepard Products, Inc. (F-31)

High-speed order picking—Bulletin describes Versarack live-storage racks that permits free access to underside of cartons and easy release when rack is up to 50 ft. in depth. Finger-tip pressure releases cartons for rapid removal. M-H Standard Corp. (F-32)

Microfilm recording — Bulletin describes package plan that combines a camera, film, processor, and other equipment for microfilming records. Cost is $7,295. Remington Rand Corp. (F-33)

Truck wheels—Made of one-piece cast-aluminum centers and equipped with tires that roll 25% easier than regular types are described in booklet from Nutting Truck & Caster Co. (F-34)

TWO FINE BOBBIN HOLDERS FROM BENDIX



**BENDIX*
SPIN-MASTER BOBBIN HOLDER**

New design—only 4 parts to assemble. Adaptable to all types of creels, the Bendix Spin-Master is a toggle-type bobbin holder which provides smooth, effortless creeling with every type of creel. Its ⅝-inch body and automatic action permit use in all standard bobbins from 8 x 4 to 14 x 7.

*REG. U. S. PAT. OFF.

**ECLIPSE
BOBBIN HOLDER**

Favorite of the textile industry for many years, this spring-type holder is still available from Bendix-Elmira. Adaptable to all creels, it provides an easy creeling motion and can usually be furnished for two sizes of bobbins (up to total weight of 65 oz.)—8 x 4 and 10 x 5 or 10 x 5 and 12 x 6, for example.

Odell Mill Supply Co., Greensboro, N. C.
North Carolina Virginia

Greenville Textile Supply Co., Greenville, S. C.
South Carolina Georgia
Alabama Tennessee

Export Sales:
Bendix International,
205 E. 42nd Street,
New York City

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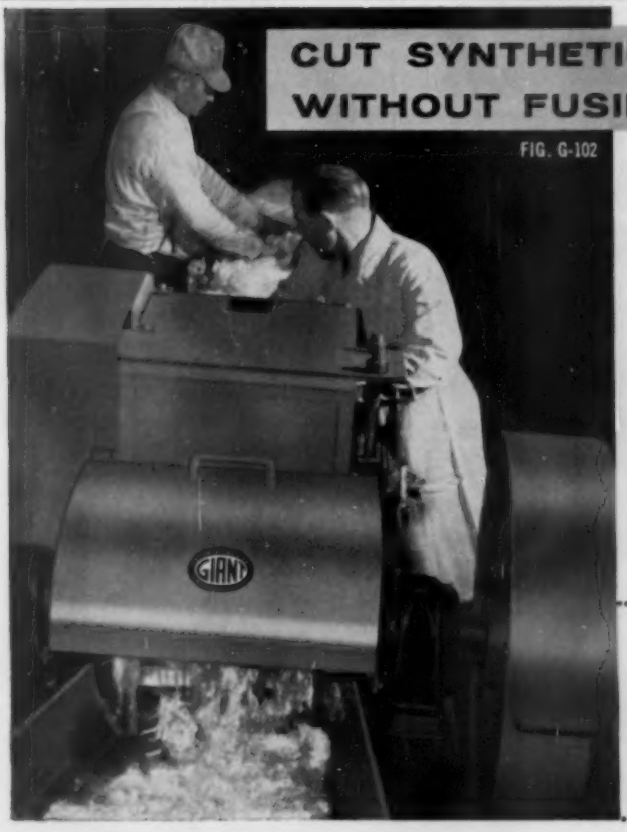
Bendix-Elmira

Eclipse Machine Division • Elmira, New York

Bendix

CIRCLE 251 ON READER SERVICE CARD



CUT SYNTHETICS WITHOUT FUSING

FIG. G-102

Taylor-Stiles "GIANT" Cutters handle most Synthetic, Man-Made and Natural Fibers Easily!

Whether you cut synthetic, man-made or natural fibers, Taylor-Stiles GIANT Cutters can meet *your* specific cutting requirements. These machines are widely used for cutting continuous filament synthetic yarns, glass yarn, thread waste, rags, etc. A complete range of sizes and capacities is available.

The GIANT No. 415 Thread Waste Cutter shown here, for example, cuts 3000 or more pounds of nylon waste an hour, without fusing, in any lengths from 2", 3" 4" up to 24". Changes in length are quickly made by means of vari-speed motor. Other features practically eliminate jamming. WHAT IS YOUR PROBLEM? We'll be glad to make a sample cutting of your material and furnish engineering advise free. Just return the coupon below or phone now for quick action.

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RIEGELSVILLE, NEW JERSEY
Phone: WYman 3-7191

Industrial cutting equipment for plastics, rubber, textile, paper and other industries; machinery for bale opening.

GIANT

☐ I would like more information on your free cutting service.
☐ I would like information on thread waste cutters.

NAME_____ TITLE_____
COMPANY_____
ADDRESS_____
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CIRCLE 137 ON READER SERVICE CARD

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NEW LITERATURE Continued

Modern financing — Bulletin entitled "Accounts Receivable Financing" tells how a mill can get an easily repayable loan from a factor instead of selling its invoices outright to the factor. Commercial Factors Corp. (F-35)

Safety handbook — That covers the proper use of stair treads, safety gratings, ramps, manhole covers, etc. is available from Bustin Steel Products Co. (F-36)

Annunciator system — That basically consists of a solenoid and plunger on which a pilot lamp is mounted is described in a bulletin that tells how the signal equipment can be used as an alarm system or as a liquid-level indicator in processing industries. Wheelock Signals, Inc. (F-37)

Stockroom space — Case history tells how a manufacturer increased stockroom space 32,000 cu. ft. by storing 23,000 items 16 ft. high in 5½-ft. aisles. Lewis-Shepard Products, Inc. (F-38)

Time studies — Can be made easily with line of stopwatches described in catalog that lists 66 improved models. Some of the watches give readings in thousandths of a minute. Heuer Timer Corp. (F-39)

Casters, wheels, and glides — Are described in catalog that includes installation guides, selection tables, descriptions, and specifications. Faultless Caster Corp. (F-40)

KNITTING PRODUCTION

CONTINUED FROM PAGE 55

stallations in American mills.

And early in '60, the first seamless-hosiery machines will come off the production line of an American manufacturer making the machines under an English license.

But new American machines are being installed at a fast clip. One manufacturer is installing 50 400-needle 3¼-in. seamless-hosiery machines each month and has been producing machines on this schedule for well over a year.

This same machine manufacturer has orders on hand for men's, misses', and children's sock machines to keep it at top production capacity for another full year. For this manufacturer, the sales volume is $2-million for the past 12 months.

Tricot Machines Double Production

One tricot-machine manufacturer had its best sales year yet in '59. With its newest machine operating at

approximately twice the old average speed, many knitters bought it to improve production capacity in the same floor space formerly used.

A few full-fashioned machines for women's hosiery were sold to domestic customers in '59. Here the motive for buying is not expansion but consolidation on a more efficient and more automatic basis of machine operation.

But sales of full-fashioned machines for foreign delivery was much more lively, and this trend is being watched carefully for its possible implication.

Pile Fabrics Continue to Expand

Mills expanded production in high-pile-fabric machines in '59 by buying moderately heavily from two machine manufacturers. The machines have miniature cards and are producing fabrics up to 54 ins. wide at 5 to 7½ yds. per hr.

Knitted pile fabrics have become important in today's textile market for three reasons:

1. The newer man-made fibers such as acrylics have just the right qualities for knitting into pile fabric—heat-setting qualities and low moisture absorbency.

2. New techniques have been borrowed from the tufting business, and fabrics are given latex finishes for permanent stability.

3. The trend toward more-stable fabrics has been reversed because the elastic qualities of knitted pile fabrics have at last been recognized in many nonapparel uses. Pile fabrics with elasticity are ideal for such products as automobile floor coverings, upholstery, teddy bears, footwear linings, and paint rollers, where fabrics must fit like a glove.

Some of the newer knitting machines are producing piles longer than those produced on present-day weaving or tufting machines. Pile heights longer than 1½ ins. are now being knitted for such products as scatter rugs.

Newer and better machines for preparing knitting yarns also came into use in '59. A coming machine to rewind high-bulk yarns in 12- and 14-oz. packages added to the running time of knitting machines.

A machine to produce false twist at high uniformity on 22-in. tubes at 73,000 rpm. is being used by mills to produce yarn with good dyeability.

Knitting mills doing their own finishing are using a new machine for

DIRT-RESISTANT Tennantized floor allows faster sweeping. Saves manhours.

Why most money-making mills have TENNANT-maintained floors

Mills that make money *today* usually know their maintenance costs to a penny.

That's why about 9 out of 10 successful mills, large and small, use the TENNANT SYSTEM of Floor Maintenance.

They know, from their own cost records, that this system provides clean, bright floors *at the lowest cost per sq. ft. of any floor maintenance method* available today. Here's why:

SAVES MANHOURS—*Tennantized* floors have 3 times the dirt resistance of most textile floors. Saves cleaning time, cuts sweeping costs, etc.

How the TENNANT SYSTEM cuts floor care costs...

1 **SAVES TIME.** Dirt is easily wiped off surface.

2 **SAVES FLOOR SEAL.** Tennantized floors seldom need refinishing.

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CIRCLE 252 ON READER SERVICE CARD

WATCH FOR THESE TEXTILE WORLD

SPECIAL EDITORIAL FEATURES IN 1960

MAY—American Textile Machinery Exhibition. Pre-show issue—exhibitors and what is to be shown.

JULY—American Textile Machinery Exhibition. Complete report of the show—outstanding developments and trends.

MID-JULY—Fact File Issue. Unduplicated hand-book data on supervision, engineering, manufacturing and chemical-treatment. Reader-tailored.

AUGUST—Man-Made fibers 1960. Twelve months interim report on new fibers, modified fibers and experimental fibers.

SEPTEMBER—Southern Textile Exposition. Pre-show issue—exhibitors in Greenville and what is to be shown.

OCTOBER—Annual modernization plus pre-AATCC and pre-Chemical Finishing Conference issue.

NOVEMBER—Southern Textile Exposition. Complete report of the Greenville show—outstanding developments and trends. Also report on AATCC and Chemical Finishing Conference.

DECEMBER—Fabrics of Man-Made Fibers and Blends. Data table on important commercial fabrics with details on fibers, blends, finishes and end-product characteristics.

automatic boarding, dyeing, and finishing in one operation with production up to 140 doz. pairs of socks per operator per 8-hr. shift.

A knitted-fabric dryer with completely relaxed support for fabric as it is dried by hot air also came into use for the first time recently. Production is up to 400 lbs. per hr.

NEWEST KNITTING MILL

CONTINUED FROM PAGE 57

same dock only a few feet away.

A large percentage of Seneca's socks is made from lamb's wool blended with one or more man-made fibers.

Fibers are weighed by hand and are run through a woolen-blending picker three times. Blended stock is stored in corrugated-metal circular bins designed and constructed at Seneca. Present production at Seneca is figured on 50,000 to 60,000 lbs. of stock blended each week on an average grain of 100. The pickers are run 15½ hrs. per day.

From the bins, blended stock is moved pneumatically through 1-ft.-dia. pipes to one of 13 sets of woolen cards. Sliver is 60 to 192 grain. Carding production is based on 50,000 lbs. per three-shift six-day week. However, production is often slowed down considerably by finer sliver.

Special Card Clothing Is Used

Seneca has done considerable testing and is now running Micro-O-Grind needle-point card clothing and grinding heads. General Manager Edward T. Deal has this to say about this new equipment. "We're getting excellent results on the needle-point equipment on all breaker cards.

"This clothing was being tested closely at the time the old plant was destroyed by fire. Conventional clothing was stripped every other day; the needle-point clothing had gone eight weeks without stripping at the time of the fire.

"The present needle-point clothing is being run without being tested. The cards are stripped only every two weeks or at blend or color changes, whichever comes first."

There are 18 ring spinning frames, and three giant-package mule spinning frames have 360 spindles each. Seneca prefers mule spinning on cer-

now! wash and soften knitted outerwear in **ONE** process with **ONE** product save at least **ONE** complete operation

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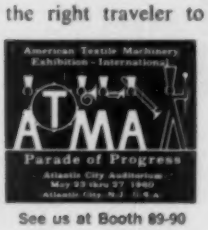

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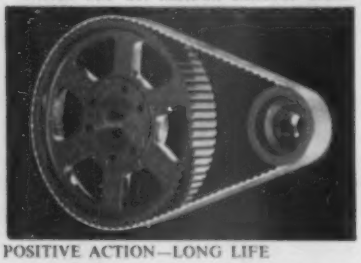
CIRCLE 141 ON READER SERVICE CARD

WOOD'S POWER TRANSMISSION PRODUCT NEWS

SIMPLE, EFFECTIVE, LOW COST

Wood's Card Drive offers all of the advantages of individual card drives without clutches or gear reducers to maintain. It is simple, smooth-starting and dependable . . . and costs less to buy, less to maintain. Write for Bulletin 6100.

CIRCLE 255 ON READER SERVICE CARD



POSITIVE ACTION—LONG LIFE

Wood's Timing Belt Drives provide positive, slip-free action. Belts are all muscle. No high initial tension, tension devices or lubrication needed. Drives are light weight, compact . . . quiet and clean. Wide load and speed range. Equipped with famous Sure-Grip Bushings. Write for Bulletin 2100.

CIRCLE 256 ON READER SERVICE CARD

50% GREATER CAPACITY

New belt materials and manufacturing techniques give you 50% more horsepower from Wood's Sure-Grip V-Belt Drives. These drives are equipped with famous, interchangeable, tapered, QD-type Sure-Grip Bushings which feature standard and reverse mounting for greater adaptability. Write for Bulletin 197.

CIRCLE 257 ON READER SERVICE CARD

MPT/360C

Woods

T. B. WOOD'S SONS COMPANY

CHAMBERSBURG, PENNSYLVANIA

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CLEVELAND • DALLAS

tain yarns because of the lofty hand obtained.

On ring spinning, 2½- to 3-lb. packages are produced. Front-roll speed is 105 rpm.

Seneca has two twisters, and some yarns are twisted single or plied. One worsted ply yarn produced, for example, is 2/140s.

Yarns are rewound from spinning or twisting bobbins on 150-end cone winders to 2½- to 3-lb. cones for knitting machines.

Socks Are Made in Many Patterns

Seneca has 163 knitting machines of four types for great versatility in pattern design. All machines operate three shifts. There are 37 Bentley model ML and BR machines in 5- and 6-in. gauge. The ML machines are links-and-links for multipattern socks in up to 36 steps. An average course per inch is 12, and speed is 140 rpm.

The double-cylinder BR machines eliminate hand transfer and retain high quality in Seneca's rib-knit socks.

There are 126 Scott & Williams HH machines; 54 have 4-in. cylinders and run 190 rpm.; 78 have 4½-in. cylinders and run 160 rpm.

Job assignments on Bentley machines are one fixer and three knitters per shift on 24 machines.

For the 54 Scott & Williams 84-needle 4-in.-cylinder machines, there are two fixers and three knitters per shift. For the 4½-in.-cylinder 60- and 72-needle HH machines, there's one fixer for every 18 machines.

Loopers are two-thread machines; 20 loopers have seven points, and 40 have nine points.

Because Seneca runs such a large variety of colored patterns, all yarns used at present are stock-dyed. But all the mill's washers are stainless steel and can be used for sock dyeing if desired. Conventional preboarders are used.

Fabric Development Increases Sales

New automatic packaging machinery and label-printing equipment make Seneca's shipping department as modern as production areas.

In the new plant, Seneca has taken great strides in fabric development. Almost every style is a blend of natural and man-made fibers or a blend of all man-made fibers. Most blends contain a percentage of nylon that forms a superstructure throughout the sock for longer wear and better washability.

Here are a few examples of blends. Sport socks in four colors and various combinations of colors: 75% lamb's wool and 25% Orlon; 85% lamb's wool, 15% nylon. Stretch socks in white and six colors: 70% lamb's wool, 10% nylon, and 20% Helanca. Work socks: 80% Orlon, 20% wool. Thermal: 100% cotton in a tufted knit to form air pockets for insulation, warmth, and comfort.

A fast-selling pattern at present in men's dress socks and women's knee-length socks is a blend of 60% lamb's wool and 40% nylon. It's made on a Bentley machine in fine gauge in a 9x3 rib and a cable pattern. Another popular pattern is a 100%-Orlon stretch sock in white and eight colors made with a straight 2x1-rib top.

Building Reflects Latest Methods

The latest designs, methods, and materials were used in constructing Seneca's new plant.

Floors are 6 ins. of reinforced concrete poured directly over 1 ft. of well-tamped gravel without a moisture barrier.

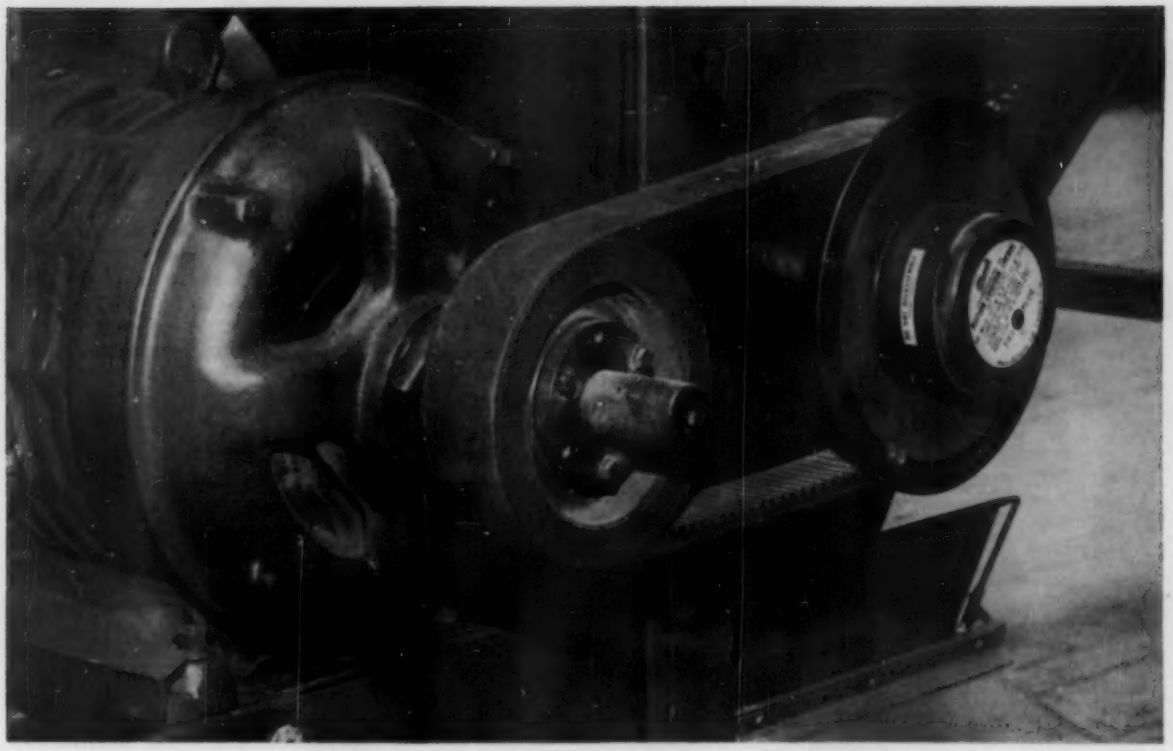
Walls are tilt-up concrete slabs. Since the mill isn't humidified, even the extremely low winter temperature of Northwestern New York doesn't cause a condensation problem. The walls were poured directly on a separating agent on the concrete floors. Then the floors were tilted to an upright position.

The slabs average 18 ft. in width, and the distance from floor to roof is 13 ft., 9 ins. About 3 ft. of the original slab is buried in the concrete foundation.

In the finished building, two slabs are bolted together with an 8-in.-wide steel plate on the inside of the building. There's a 1-in. space between the slabs for expansion. The next slab joining is a joint formed by a 16-in.-wide concrete pier on the outside. All alternate joinings are made in this same way. The mill's fire walls and office partitions are concrete blocks.

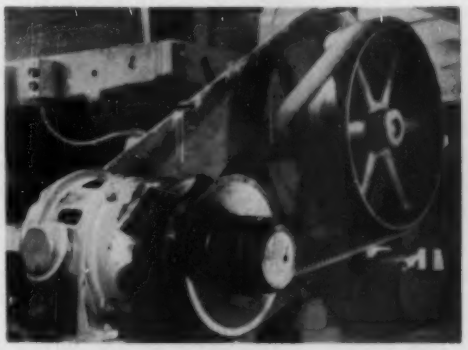
The roof is prestressed concrete slabs, 40 ft. long and 54 ins. wide, to form 40-ft. bays between supporting columns. A layer of 2-in. foam concrete is poured over the concrete slabs.

There are four layers of felt roofing paper over the foam concrete. Then the roof is hot-tarred and stoned. The roof is flat with no pitch at all.



New, revolutionary "MCS" sheaves won't freeze, hold constant speeds

Wood's "MCS" motion control, variable speed sheave is entirely new and revolutionary in concept. It holds constant driven speeds under varying torque loads. And, like Wood's recently introduced "MS" sheave, the "MCS" won't freeze or stick. Practically no maintenance is required. No more downtime, running through the speed range or dismantling. The oil reservoir requires checking only once or twice a year. These amazing advantages are made possible by Wood's exclusive, resilient cam follower construction and rotational oil pumping action. Investigate these and many other features. Write for Bulletins 8102 and 4101.



Wood's "MS" variable speed sheave is similar in basic operating principle to the "MCS." Power is transmitted through resilient keys which are externally located, permitting unobstructed lubrication, elimination of freezing and sticking.

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NEW MACHINES AT SLANE

CONTINUED FROM PAGE 59

a seaming machine.

Approximately half the mill's production has been switched from looping to seaming during the past year.

John Slane explains Slane's future plans for seaming machines in this way: "Seaming gives us a neater job. The nylon seaming thread is very durable, and tests made for us by a commercial laboratory show that socks last longer. Shipping of finished hosiery is faster because we have fewer bottlenecks. Floor space is reduced by approximately half because we expect 60 seaming machines to replace 115 to 120 looping machines. Seamer training requires only one-fourth the time of looper training."

The looping and clipping department is checked closely to insure high-quality socks. In addition to a supervisor, there's one head inspector and one assistant inspector. Spot-checks are made constantly on machines that are known to be making faulty fabrics.

Automatic Boarders Are Installed

All dyeing and finishing equipment is six years old or less. New boarding machines have just been installed. Boarding production is 250 to 300 doz. pairs of socks per machine each day. These machines also have automatic top-clipping attachments that are giving better results than hand-clipping.

Slane management men believe they're getting a better hand with the new boarding machines, especially on man-made fibers. Operators are better satisfied too because heat is less intense.

But Slane is looking forward to more automatic finishing machines that management men believe will be developed within the next three years; one finishing attachment anticipated is an automatic unloader for socks at the boarding machines.

Slane's immediate plans in finishing are for a complete chute, hoist, and conveyor system to carry gray goods to finishing machines and also to remove finishing hosiery and take them to boarding machines. Two full-shifts supply of socks is already available at each boarding machine.

A production-control department established in 1954 and presently composed of four employees is doing much to keep Slane's production efficient.

After yarn is purchased, this department schedules its delivery; great care is taken not to stock too much yarn of one color or yarn number. Yarn delivery schedules are made week by week. Therefore the right colors and yarn numbers are in stock at all times; and, very important, there's little excess yarn left at the completion of each order and sales season.

With this close-control system, more colors and types of yarn are available.

Yarn is presently received by an automatic elevator and conveyor system. An electric eye controls the elevator, and the elevator makes a trip every 40 secs. with two cases of yarn. An automatic stacking and conveyor system for yarn storage will be installed soon.

Newer Methods Are Being Planned

Color standards are being developed to check all yarn by shade before it is put in stock. A check is also being prepared for standard density of yarn wound on cones.

The production-control department correlates mill production by orders. As orders are received and typed up, they are tallied by styles and sizes to be knitted. All shipments are scheduled a full week ahead by delivery date. Paired-stock inventory is also kept closely. Tickets show the date an order leaves the knitting room, and the order can be followed all the way through the plant.

Production-control-department employees are in liaison between production and sales. The staff is being trained for junior executives in the organization.

MILL CHECK-UP

CONTINUED FROM PAGE 60

tion can usually be traced to insufficient air pressure or to rust in the cylinder that causes condensation of moisture in the air line. Sometimes leaky seals around the piston cause the trouble.

The superintendent's next stop is at the evener motion at the side of the picker. Here, he opens the cone box and observes the movement of the belt as it regulates the speed of the finisher-

section feed rolls that control the weight of the lap. If the belt is swinging widely, the evener motion is being overworked; and the entire feed control is due for an overhaul.

It may be necessary to change the point of the fulcrum of the long belt-shifting lever to alter the throw or movement of the belt along the cones for a given thickness of cotton passing between the roll and the pedals. This adjustment must be correct to avoid either over or under correction of the feed rolls. Either condition will contribute to lap unevenness.

Beaters Must Be Sharp

The superintendent next stops the picker and checks the beater and screen sections. If the picker has a blade beater, the edges must be sharp. Rounded, dull beaters do not clean. If a carding beater is used, the pins must be straight. Bent or hooked pins accumulate fibers and may cause fiber damage.

Beater settings depend upon exact mill conditions, but generally they should range from 1/8 to 3/8 in. for blade beaters and from 1/4 to 3/8 in. for carding beaters. The staple length of the cotton and the weight of the lap determine the proper settings, which are measured from the beater to the feed rolls. There is a slight difference in settings between the finisher and breaker beaters.

Dirty Screens Cut Down Air

The screens merit a quick look just to see if a choke or mass of stock has dented the surface. Dented screens cannot hold the fibers, and they cause thick and thin spots in the lap that cannot be entirely corrected before the lap passes to the calender section. Dirty screens with taggings of fibers reduce the air current forming the sheet, and this condition too contributes to making a poor lap.

The settings of the adjustable grid bars under the beater are critical. For short, dirty, low-grade cotton, the angle of the bars to the path of the beater should be acute. This setting opens the bars and provides maximum waste extraction. For finer stock, the angle can be decreased to extract less waste.

The superintendent looks under the beater section in his quick check and bases his judgment on the droppings. If too much good fiber is seen, the angle of the bars is too great. If the finished lap appears too dirty, then it is probable that the bars are closed too much.

The superintendent then starts up the picker for a look inside. With a tachometer, he checks fan speeds and beater speeds. For a two-blade beater, the speed should be from 1,000 rpm. to 1,500 rpm.; the speed is decreased to a range of 800 to 1,000 rpm. where a three-blade beater is used.

Fans generate the air current through the screens, and speeds should range from 1,000 to 1,500 rpm. These speeds are coordinated and set to suit mill conditions, and they should be standardized and specified by mill testing. The superintendent chiefly checks for variations from standard caused by belt slippage or poor maintenance.

Before the superintendent walks away, he looks through the glass inspection windows of the screen section. The stock should be thrown up from the beater to the screen in small fluffy clumps that travel in a straight line and are evenly distributed from one side of the screen to the other. Even distribution of evenly sized fiber groups is a key to even laps.

For the superintendent's last look, he watches the picker in motion and notes how often the feed control is starting and stopping. Here again, excessive starting and stopping indicate over or under correcting, which causes lap-weight variation.

This morning, the superintendent's first look at the laps and the lap-weight chart indicated that the laps being made are clean and within limits. The check of the picker at its most vital subassemblies showed that nothing is seriously out of line. It is time for the superintendent to continue his walk through the rest of the mill.

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 122

double-duty switch results in savings in time, space, and wiring. It also simplifies actuating systems.

The switch, 301LS1, actually contains two-circuit double-break switches that can control four isolated circuits. When the roller lever actuator is moved to the left, it operates one of these basic switches. And when it's moved to the right, it operates the

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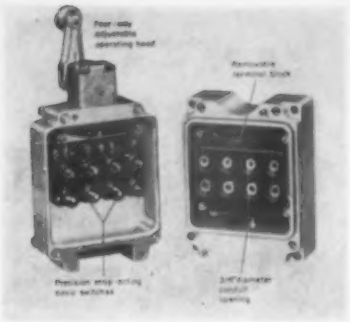
Newark 55, Del.

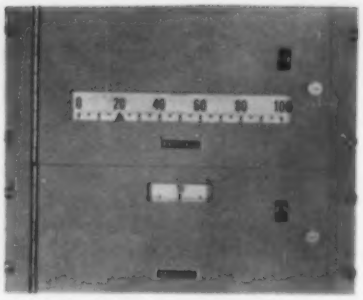
CIRCLE 145 ON READER SERVICE CARD



other. The basic switches and terminals are mounted in rugged die-cast aluminum housings. When they are connected properly to a sealed conduit, the complete assembly of switch and mounting block is oiltight. **Circle T-16 on Reader-Service Card**

Controls

Two rack-mounting Dynamaster Servimechanisms for computing and



control systems and indicating gauges are being offered by Bristol Co., Waterbury 20, Conn. The two models are mounted in hinged swinging panels to fit standard 19-in. Retma relay racks.

Model 692 is mounted in a 19-in. panel that's 17 ins. high. The drum-type scale is approximately 22 ins. long for good visibility.

Model 694 uses a standard 11-in. Dynamaster scale and is mounted in a 19-in. rack panel 8¾ ins. high. It is of particular advantage when the observer wishes to see the entire scale range. **Circle T-17 on Reader-Service Card**

Static Neutralizer

An improved formula, Statikil, for neutralizing static electricity is available in self-spraying cans or in bulk containers from Statikil, Inc., 1220 W. Sixth St., Cleveland 13, Ohio.

The product retards static electricity in both yarns and fabrics being manufactured. It is said to be particularly effective on acetate yarns.

On difficult operations, bulk Statikil can be sprayed through compressed-air pressure nozzles directly on the yarn or fabric in the machines.

When the product is sprayed on fabric, it reduces static for subsequent finishing processing. **Circle T-18 on Reader-Service Card**

CONTINUED ON PAGE 149

SEASONAL PEAKS

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Four Ways To Maintain Instrument-Control Systems

There are four basic requirements in installing and maintaining an economical instrument department for electronic and other control systems: (1) a well-rounded organization, (2) proper facilities, (3) good procedure methods, and (4) an adequate training program.

The objectives of an instrument-maintenance department are to: (1) routinely check and inspect units, and (2) install new units or modify instrument systems as required.

For most instrument-maintenance departments, one mechanic is required for every 100 major instruments. However, this figure varies if several types or certain special types of instruments are used.

For example, instruments on clean services such as water or natural gas don't require as much attention as instruments on corrosive chemicals such as chlorine or caustic soda. The condition of the air in a plant also affects the number of instruments per mechanic.

Well-Equipped Shop Is Needed

A comfortable, well-lighted, well-equipped instrument shop is furnished for proper maintenance of instruments. Each mechanic has a separate workbench, and each bench is equipped with an adequate supply of air and natural gas, a vacuum line, and convenient electrical outlets. Each mechanic also has proper test gauges, air regulators, and hand tools.

There is a rotameter-testing bench, a constant-temperature bath for testing temperature instruments, a caustic bath for cleaning control valves, a mercury cleaning table, flow meters, grinding and buffing wheels, vises, and large tools for the over-all department.

Isolated Area Is for Testing

A special area separated from the main shop by a partition is used to service electronic instruments and to store test equipment. This isolated area makes it safe to work on, and leave overnight if necessary, delicate electronic equipment that might otherwise be broken or tampered with.

A stock room is as complete as possible without the danger of leaving items on the shelves over too long a period. Stocking of parts is based on the cost of the article, delivery time, unit downtime, and alternate repair methods available at failures. However, it is impossible to have complete coverage of all stock. A recommended spare-parts list furnished by most instrument manufacturers is also valuable in setting up a stock room.

Technical Data Must Be Available

Proper catalogs, instruction books, wiring diagrams, installation prints, and equipment drawings are valuable in operating an instrument department. All of these articles can be obtained, usually without cost, from instrument manufacturers.

Maintenance record cards are kept on all major instruments. These cards give complete specifications for each instrument: serial number, type of material, size, and any other information necessary to reorder the instrument or spare parts. Each card also shows the location, application, and installation date of the instrument.

Trained Mechanics Are Necessary

Because instrumentation in great scope is comparatively new, a good training program for instrument employees is necessary. One good training program is a correspondence school course tailored to specific needs. An instrument department is divided into two sections, and each section studies 2 hrs. a week in 1-hr. sessions. The course is conducted in the plant.

This training program is supplemented with actual shop training for new mechanics on all types of instruments. Both old and new mechanics are trained on new types of instruments. *Felix E. Dandois, at the 11th Plant Maintenance & Engineering Conference.*

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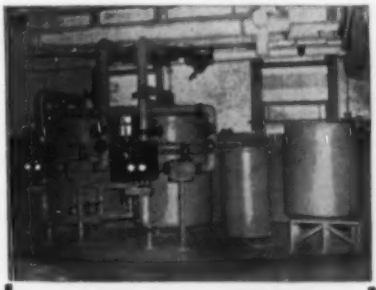

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Some Tips on Reducing Downtime at Carding

When a woolen card stops, the mill loses money at a rapid rate. Downtime can be reduced by—

- *Stripping less frequently*
- *More intensive inspection*
- *Planned grinding and overhauling*

By ROBERT WHITMAN

FOR EVERY HOUR OF LOST PRODUCTION on a 60-in. woolen card, the mill loses $25 to $30. For wider cards, this figure is higher.

High production is not entirely a matter of high speeds; it is also a matter of steady operation unbroken by preventible breakdowns. Some of the most common causes of unnecessary lost time are (1) over stripping, (2) lack of inspection, (3) no definite oiling program, (4) no prescribed system of grinding or overhauling, and (5) frequent breaking of the web at the middle alley.

In many mills, there is too much stripping of the cards. If the blends are fairly clean, the clothing in good condition, and all card adjustments correct, a card should handle several thousand pounds of stock between stripping operations. This interval is contingent on the nature of the blends, of course, since greasy stocks obviously require more stripping.

The frequency of stripping should be governed by the poundage or production of the card rather than by the length of time the card is in production. It is a good plan to make tests to determine how many pounds of a certain blend a card can run without stripping. If cards are being stripped every 24 hrs., the chances are they can run 48 hrs. just as well if you keep a close check on spinning quality and yarn tests.

A planned system of inspection can go a long way toward preventing both minor and major breakdowns. Card fixers should be trained to watch their machines for trouble symptoms and report to the overseer.

Inspection List Is Helpful

In turn, the overseer should keep one list of items requiring immediate attention and another list of major items for future attention. Major items should include projects such as applying new clothing or installing new aprons; time can be saved by doing these jobs when the card is stopped for grinding.

When a card is stopped for stripping, all belting should be inspected for worn lacings or cracks. The strippers should report to the card fixer any defects that may later cause a broken belt when the machine is in production. At the same time, the fixer should check the settings of all fancies, give the entire card a general inspection, and make minor repairs and adjustments. For example, if the web has been breaking at the middle alley, the cause can usually be remedied at stripping time.

There are over 300 bearings on a three-cylinder set of cards equipped with a double-rub tape condenser. These bearings require oil or grease at regular intervals. With no definite system of oiling, there can be much lost time from tight bearings and broken gears and castings.

In a small card room having 10 or 12 sets of machines, the oiling can be delegated to the strippers since these men have no machines to watch and can give their undivided attention to the oiling. In a room of 20 sets or more, oiling and greasing is a full-time job for one man.

Taking too much time in starting lots, especially when there is a radical change in the type of stock and size of the roving, can be a source of much lost time. Usually a card is stripped at the time of lot changes, and a smart fixer can figure out and make most of the necessary changes when the card is stopped.

Sometimes, however, even a seasoned fixer does not allow enough time for a change in weight made at the automatic scale pan to get all the way through to the spools. Consequently, he is continually changing weights while his roving spools turn into waste.

On a four-cylinder set, a minor change in weight at the scale pan takes about 15 mins. to get through to the roving spools. This figure may vary somewhat with the speed of the feed rolls and the length of the two table aprons. A bit of instruction will teach fixers to become adept at getting the correct roving weight before starting lots.

It is an excellent plan to list all sizes of change gears, draft gears, automatic scale settings, fancy speeds, and production speeds for each card when it is running on a given blend. If this is carefully done, much time can be saved in changing over from one type of blend to another.

Regular Maintenance Is Necessary

By far the best preventive measure is a definite system of grinding and overhauling. Regular maintenance is necessary for a woolen card because wear on a three-shift operation is comparatively rapid.

When the card is shut down for this work, major repairs, such as putting on new clothing, installing new aprons, and replacing tapes, should be done. At the same time, minor repairs and adjustments that mean much to the smooth operation of the card should also be made. Frequency of grinding and overhauling must be deter-

mined by each mill and gauged by the character of the blends.

Heavy, rough stock causes extra wear and tear on the entire machine, and on a three-shift basis a general overhaul may be necessary every four months. On finer, softer blends, a much longer period between grindings can be scheduled without any ill effects.

Before the card is stopped for a complete overhaul, a list of all jobs to be done should be clamped to a board and hung on the condenser for the repair crew to refer to. This practice eliminates misunderstandings and alibis.

Advance information also gives the repair crew time to make preparations before the card is stopped. Such preparations may include pulling out wire to make a taper or getting the right aprons from the supply room. These are time saving items.

Fancies need grinding quite often in order to function efficiently; and since the grinding is a three- or four-hour job, time can be saved by keeping on hand two spare fancies for every 10 sets of cards. The spares are set in the card while the regular fancies are in the grinder, and the exchange is made when the card is stopped for stripping.

Personnel Training Helps

All operators should be impressed with the importance of reporting any trouble or faulty operation and encouraged to make suggestions for improvements. An intelligent operator tending his machines 8 hrs. in a row quite often observes little items that may escape a brief inspection by a fixer or the overseer. The most experienced overseer can glean bits of valuable information from his workers if he keeps his mind open for suggestions.

Careful training of each worker makes for a more efficient operation, which in turn automatically reduces lost production time. A bonus or incentive plan based on yarn production and quality creates a strong incentive for greater effort if the plan is figured so that all card-room workers have a good chance of being rewarded. Since all bonus plans for a woolen card room must be based on a group effort, supervisory leadership must be of a high caliber.

Multishuttle-Loom Part

An all-metal transfer bunter and binder rest for model C-4 and C-5 looms is available from H. F. Livermore Corp., Allston Station, Boston 34, Mass. The loom part is said to eliminate side lines caused by broken filling on the first pick after a bobbin transfer and trapped filling between the box guide and binder.

The highly polished curved ear of the bunter and binder rest guides the shuttle into the box with smooth positive action so that shuttle life is increased.

There are no leather parts or other parts to wear. Loom maintenance cost and downtime are reduced because the bunter-binder rest is cast of malleable-iron alloy. **Circle T-19 on Reader-Service Card**

Pocket-Size Micronaire

A pocket-size Micronaire instrument that needs no connection to an air line or compressor has been announced by Sheffield Corp., Dayton 1, Ohio.

The instrument, called "Little Mike," has a built-in scale for weighing cotton samples, a means for mechanically generating air power, and a Micronaire scale and indicating column. Fineness is indicated by the position of a small lightweight metal float in a glass column. **Circle T-20 on Reader-Service Card**

Control Instruments

Several more sensitive and versatile Chronoflo recorder-receiver instruments have been announced by Builders-Providence Div., B-I-F Industries, Inc., 345 Harris Ave., Providence 1, R. I.

Design features include: a power positioner with quieter faster response in 2-, 4-, 8-, 15-, and 60-second time cycles, up to 16 control switches for alarm and control functions, swing-out panel for easy access, modular construction, and multiple pen arrangements.

For telemeter flow, pressure, temperature, level, position, revolutions per minute, and electrical qualities, this instrument is comparable with B-I-F's other control systems in tone, microwave, or radio-transmission links. **Circle T-21 on Reader-Service Card**

Variable-Speed Sheave

Simple and accurate speed adjustment and nonfreezing construction are features of a multiple-groove variable-speed sheave, SVS, for standard V-belts being made by T. B. Wood's Sons Co., Chambersburg, Pa. Positive locking action prevents even microscopic motion between the components. Therefore fretting corrosion cannot occur, lubrication is not needed, and freezing is eliminated.

Positive locking collars securely clamp split-flange extensions to a sleeve that is keyed to the shaft the sheave is mounted on. Clamping screws on the collars are tightened to secure the sheave on the motor shaft and to lock all moving sheave parts. Design of the locking collars is such that the clamping screws cannot be overtightened.

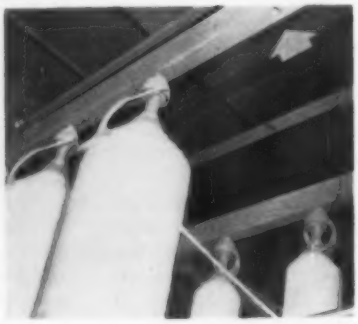
To make a speed adjustment, the drive is stopped and belt tension released. The two locking collars are loosened, and the adjusting screw is turned, from either side, with an open-end wrench or socket wrench. Collars are retightened, belt tension is adjusted, and the drive is again ready to operate.

The sheave is designed for two-groove, three-groove, or four-groove standard-stock companion sheaves and for V-belts of *A*, *B*, *C*, or *D* section. Variations of pitch diameter are: *A* sheaves 1.1 ins., *B* sheaves 1.4 ins., *C* sheaves 2.2 ins., and *D* sheaves 3.0 ins. Range of capacity is from 5 to 150 hp. **Circle T-22 on Reader-Service Card**

CONTINUED ON PAGE 151

SPINNERS like the new frames because of their simplified drafting systems, knee brakes, and small clearers.

BOBBIN HOLDERS fit into a hollow wood screw (arrow) that gives additional stability. Note wooden creel.



New Spinning Frames Reduce Labor Cost 40.67%

New spinning at Newberry Mills, Inc., Newberry, S. C., has increased production, cut manufacturing costs, and improved quality of print-cloth yarn. Other gains include—

- *Bigger work assignments*
- *Fewer ends down*
- *Better yarn appearance*

NEWBERRY MILLS recently installed 36 new Reiter spinning frames that reduced direct and indirect labor cost in the warp-yarn department 40.67%. At the same time, work assignments were increased 82.52%.

Other gains include a production increase of 23.32%. Ends down showed an 80% improvement. Breaking strength increased 7.44%, and Uster variation was reduced 24%.

Tests made with an imperfection counter showed 42.86% fewer imperfections. Yarn appearance improved from B to B+.

"Among the mechanical advantages of these frames," says Supt. Fred Weir, Jr., "is the drafting system that features a long bottom apron, a short top apron, and a simplified cradle that makes cleaning easy. Operators like the knee brakes, which stop spindles instantly, and the small easy-to-handle clearers. One-shot lubrication virtually eliminates oiling."

Blending Helps Spinning

Newberry spins 30s warp yarn from 1-hk. roving made from 1⅛-in. M and SLlf cotton. The stock is carefully blended by Micronaire and by

COLLECTOR BOXES are built into the foot end of the frame to save space and reduce air resistance.

CONTINUED FROM PAGE 149

the number of fibers in the yarn cross section. This blending practice, recently adopted, is partially responsible for some of the gains made in spinning.

The 348-spindle, 3¼-in. gauge, single-creeled frames spinning 30s warp yarn have a front-roll speed of 135 rpm. Spindle speed is 10,000 rpm., twist multiplier 4.40, turns per inch 24, total draft 30.5, break draft 1.3, bobbin weight 0.24 lbs., ring size 2 ins., and traveler size 5-0.

The 10x5 roving bobbins are hung in open wooden creels by hangers that have been modified by the mill to make creeling and cleaning easier. Another feature that facilitates cleaning is movable thread guides.

Manual cleaning is reduced by overhead traveling cleaners and built-in suction cleaning. The collector box is designed as an integral part of the frame and streamlined so that little lint sticks to it.

Cleaning Schedule Is Strict

Spinners and doffers do all of the cleaning, and rigid schedules are maintained. **Here is the cleaning schedule for spinners:**

1. Guides—run out 1 time per 8 hrs.; 9 frames every 8 hrs.

2. Rolls—pick with air picker ½ frame per 8 hrs.; 9 frames every 6 days

3. Base rails—wipe 9 frames 1 time per 40 hrs.; 3 times every 5 days on schedule

4. Steel roll necks—clean ½ frame per 8 hrs.; 9 frames every 6 days.

5. Ring rails—brush ½ frame per 8 hrs.; 9 frames every 6 days

6. Underclearers—clean ¼ frame per 8 hrs.; 9 frames every 12 days

7. Head end and gear covers—clean 1 frame per 8 hrs.; 9 frames twice every 6 days

8. Tape idlers—clean ¼ frame per 8 hrs.; 9 frames every 12 days

9. Top clearers—clean ¼ frame per 8 hrs.; 9 frames every 12 days

Cleaning schedule for doffers:

1. Rockers and underparts—mop 1 time per 8 hrs.

2. Head and foot ends—clean 1 time per 8 hrs.

3. Spindle chokes—clean as they occur

4. Bobbins on floor—pick up as noted

Drying Oven

Accurate temperature control within ± 1° C. of any set temperature in the 35 to 350° C. range is featured in an electrically heated drying oven announced by Electric Hotpack Co., Inc., 5020 Cottman St., Philadelphia 35, Pa.

A calibrated thermostat dial allows direct setting to any desired temperature, and an automatic overtemperature controller breaks the circuit if the dryer-chamber temperature exceeds the control setting.

The cabinet is made of enameled steel. The interior is finished with 18-8 polished stainless steel. **Circle T-23 on Reader-Service Card**

Double-Duty Doffer

A double-duty doffer that removes lint from toothed cylinders and provides an air current for blowing cotton to the next operation has been developed by the Southern Regional Research Laboratory, U. S. Dept. of Agriculture, New Orleans, La.

The doffer has an impeller that consists of a series of spoked flanges to which are attached brush sticks. The brush sticks clean lint off the toothed cylinder and at the same time set up an air current in the manner of a centrifugal blower. Two processing cylinders can be doffed simultaneously, whereas conventional doffers handle only one cylinder.

The doffer is covered by a patent assigned to the Secretary of Agriculture. License to use the patent in the United States can be obtained without cost from the Secretary. **Circle T-24 on Reader-Service Card**

Cotton-Cleaner Drive

A cleaner drive that produces better-ginned cotton by eliminating slippage and chokes has been announced by T. B. Wood's Sons Co., Chambersburg, Pa.

The standardized drive fits nearly all makes and models of cotton cleaners. Each packaged unit contains two grooved pulleys of the same size and a matching toothed belt reinforced with helically wound steel cables.

The pulleys, flanged on one side only, are mounted on shafts so that the flanges are on opposite sides. This arrangement stops belt side thrust and throw off. Belts can be easily removed without a spreader or pull-off tool. **Circle T-25 on Reader-Service Card**

Antiresin-Deposit Agent

Water-Skipper, developed by Textile Adjuncts Corp., 4907 Farragut Rd., Brooklyn 3, N. Y., is offered as a coating material for tenter-frame clips, automatic screen printers, roller coaters, and other equipment that needs protection from resins, print pastes, or latices.

The product is based on silicone resins and methyl tung-oil esters. When it is sprayed on processing equipment, a thin layer of material is deposited that is highly resistant to picking up any of the commonly used textile-finishing products. The product is durable and will withstand the simple washing-down process that is sufficient to remove any accumulations of resin or color that might occur. Water-Skipper is also recommended as an anticorrosion coating for all types of metal surfaces. **Circle T-26 on Reader-Service Card**

Static Eliminator

A static eliminator for warping operations that achieves higher efficiency through basic design changes has been introduced by Lindly & Co., Inc., 248 Herricks Rd., Mineola, N. Y. The eliminator is made by Lance Engineering Co. Ltd., of England.

The usual round tubular electrode head has been replaced with a square shape that permits the yarn sheet to come closer without damage. The second change is in the construction of the shield. The top surface is a continuous slot, and the bottom is perforated.

This construction creates an upward draft that increases ion dispersion rate and minimizes the collection of solvents on electrode heads that might turn into toxic gases. Current never exceeds two milliamperes, which provides complete safety for operators. **Circle T-27 on Reader-Service Card**

CONTINUED ON PAGE 153

Apron Slippage Can Cause Variation in Woolen Roving

Here are some pointers that may help you to run your woolen cards more efficiently. In addition to apron slippage, watch out for—

- **Gear and belt slippage**
- **Waste in gear trains**
- **Unstable breast drives**
- **Slack stripper belts**

By W. J. CROFTS

APRON SLIPPAGE is one of the main causes of variation in woolen roving. And frequently slippage is one of the hardest faults to detect.

The conventional wooden-slat spike apron often slips when the leather belts stretch or become oil soaked. Too much resistance on the spikes when the hopper is overfull is another cause of slippage.

Detection of this kind of slippage is often difficult since the apron may pause only a few seconds and then start up again. But this brief pause reduces delivery of stock to the weighing pan and causes light roving.

An old spike apron may slip only at occasional intervals, and when watched by the overseer or card fixer it may appear to be working perfectly. Yet a light roving reported at the finisher or partly used spools sent back from the spinning room indicate apron slippage somewhere.

Slippage Causes Variation

The slightest slippage of the table-feed apron at the first breaker or at the broad-band feed shows up in variable roving weights. Because of the slow forward motion of these table aprons, the slippage is not always apparent unless the action of the apron is closely watched over a period of time. The cause usually is oil-soaked leather belts losing traction or trash and lint working down between the slats and packing around the apron rolls.

The apron may slip or pause momentarily at only one point in its circuit around the driving roll, which makes detection elusive. A carder sometimes gets complaints of uneven roving weights after many check-ups of the card from end to end—before he finds that one of the table aprons is slipping slightly at rare intervals and just enough to make the roving run light. This roving is closely followed by many yards of overweight roving caused by stock packing thicker on the table when the apron slips.

An all-metal apron with its smooth, unbroken surface and positive drive normally will eliminate all of these troubles caused by the spike apron or carrier apron slipping. The metal apron also tends to stop all lint and trash from collecting inside the aprons.

The Peralta machine comes equipped with a carrier apron between the doffer and crush rolls, but many carders have discarded these aprons because the wooden slats become coated and rough with deposits of black grease that catch and break the web and cause it to wrap around the apron. With single-cylinder first breakers, the web is not always carded enough to give it the strength necessary to bridge the gap between the doffer and crush rolls without a supporting apron.

The web sometimes breaks at one edge, with one-quarter or a third of its surface piling up on the floor. Then of its own accord the web goes on through the rolls and carries along the strand of web from the floor. This behavior of the web has a drastic effect on roving weights if the temporary break goes unnoticed. A smooth, all-metal supporting apron should prevent this trouble.

Gear and belt slippage causes uneven 50-yd. weighings of the roving. At the first breaker, a hard substance such as a piece of bone or wood may enter the feed rolls and pry the rolls apart so that the connecting gears do not mesh. When this condition occurs, one roll is driven by friction, which makes the motion unstable.

Fly and lint in the train of gears that drives the feed rolls at either the first breaker or at the finisher mean trouble. Well-designed gear covers with ample coverage for the gears is the answer.

Since the metallic breast directly drives the first breaker feed rolls, an unstable breast drive directly affects the output of stock from the first breaker. The breast belt must have good traction, which means that the leather should be soft and both pulleys should be covered with good leather. The belt should be kept tight.

Old-style breasts have small 2-in. shafts; and with the drive far out near the end of the shaft, an overtight belt will spring the light shaft and throw all the settings out of line. Moving the drive in as close as possible to the breast bearing will shorten the leverage so that a tight belt will not spring the shaft so easily. Use larger-diameter and wider pulleys if there is room to do so. The metallic breast does a lot of tough work and must have a rugged drive to insure steady operation.

Stripper Belts Affect Speed

Slack stripper belts that cause uneven speeds at the fancy are another cause of erratic roving weights. The feed rolls and table of the broad-band feed are driven by the lickerin or leader roll; the belt drive must always be in good condition to get an even flow of web into the finisher card.

On lofty stocks, too much speed at one or both of the finisher fancies creates a wind-blown effect on the web at the surface of the cylinder and produces erratic weighings. This condition does not affect the first-breaker cylinders quite so much. Permitting any of the cylinders or doffers to become greased over from lack of complete stripping will cause variable roving weights. This condition occurs with blends containing unscoured fiber.

One of the prime reasons for variation and perhaps the chief one in some card rooms is general and drastic deterioration of the clothing. If the wire is too weak to hold and carry the web firmly on the cylinders and doffers, the result is unstable weighings of the roving.

Tag System Marks Looms For Better Cotton Fabrics

• A combination cloth room-weave room system at Joanna Mills uses yellow tags to reduce over-all mill seconds. Here's how the system works—

By **ALEX CRAWFORD**, Assistant Superintendent, Joanna Cotton Mills Co.

A SYSTEM of reporting second-quality cloth from the cloth room to the weave room has been used for the past nine months at Joanna Cotton Mills Co., Joanna, S. C. The system features a "yellow tag," and it has been very effective in reducing seconds.

When a roll of cloth is inspected in the cloth room and labeled "seconds," the head inspector issues a yellow tag for the loom making the seconds.

This yellow tag contains space for the following information: loom number, style number, date of inspection, the inspector, the specific defect placing the roll of cloth in seconds, and the number of yards put in seconds.

The yellow tag is then put on the loom, and it remains there until the loom makes first-quality cloth again.

Follow-Up Is Fast and Complete

But just as soon as a small roll of cloth has been woven, the roll is removed from the loom and inspected to see if the defect has been corrected. And if the cloth is first quality, the yellow tag is removed from the loom.

However, if the cloth is still seconds, a second yellow tag is hung on the loom.

The system was further improved recently by using a large blackboard to show the over-all status of the yellow tags. One blackboard is hung in each weave room.

The blackboard shows each loomfixer section and shift. After two yellow tags have been put on a given loom, a similar yellow tag with a large stenciled "2" is hung on the blackboard in the space designated for that particular loom and shift. Therefore, all supervisors and other employees can see whose looms are making second-quality cloth.

Every Employee Knows the Score

If the defect is still not corrected, the yellow tag on the blackboard is changed to "3," "4," "5," or "6."

General employees in the weave room call the blackboard, "the box score of the battle between the loomfixer and the yellow tags."

The purpose of the blackboard is not discriminatory, but the system does bring to everyone's attention the specific looms and the number of looms that are making seconds so that corrective action can be taken by the loomfixer and supervisor. Top-management also checks the boards closely.

At one quick glance, these facts are shown: (1) the number of looms making second-quality cloth, (2) the loomfixer who has the tags, and (3) the number of successive tags on each loom.

Other Departments Share Blame

Of course the loomfixer and weaver aren't always blamed for seconds. Inferior work from the card room, spinning room, spooler room, or slasher room may cause seconds. But the blackboard points up the weakness.

Then the loomfixer traces the fault to correct the defect in one of these ways: proper loom adjustment; correction of weaver's faulty methods; instructions to hour hands, such as batteryhands and filling boys; and better cooperation with yarn-preparation departments.

But no matter who's at fault, the yellow-tag method has increased over-all cooperation between all mill departments, weeded out defective materials, and has improved fabric quality in all constructions.

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 151

Turbine Pumps

An expanded line of centrifugal pumps in 40 sizes of vertical short-coupled turbine units has been announced by Allis-Chalmers Mfg. Co., 1056 S. 70th St., Milwaukee 1, Wis. They are available in ratings of 20 to 8,000 gals. per min. at heads to 400 ft. and over according to the number of stages.

The pumps are for cooling towers, circulating or process pumping, lake and river, intakes, boosters, fire pumps, drainage, pipe-line boosters, filter washing, and dewatering.

Space saving is accomplished through integral construction of motor support and discharge that reduces the base requirements. Because its pumping element is usually submerged, the pump seldom needs priming. Its discharge column can be varied for changing requirements, and its head and motor can be located above high water to prevent flooding and motor damage.

One small foundation supports the motor and discharge nozzle. The pump is available with Allis-Chalmer's hollow-shaft a.c. motors, and it has no open coupling. **(Circle T-28 on Reader-Service Card)**

Pressure Valve

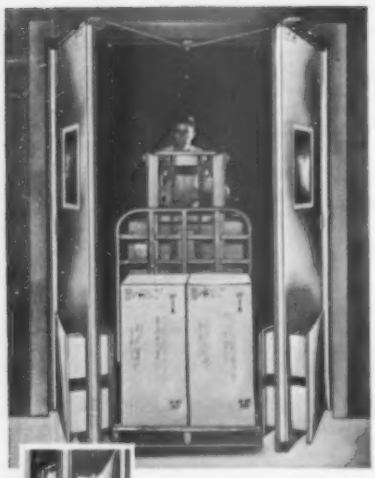
A polyvinyl-chloride relief and back-pressure valve for corrosion-resistant applications is available from Milton Roy Co., 1300 E. Mermaid Lane, Philadelphia 18, Pa. **(Circle T-29 on Reader-Service Card)**

Screw-Anchor Kit

Everything needed for anchoring screws in all kinds of materials is included in a kit being introduced by Holub Industries, Inc., Sycamore, Ill. **(Circle T-30 on Reader-Service Card)**

Self-Draining Valve

A self-draining valve with a special-type bolted bonnet that guarantees perfect alignment and freezeproof action under all conditions is announced by Jerguson Gage & Valve Co., 80 Adams St., Burlington, Mass. **(Circle T-31 on Reader-Service Card)**



Keeps Traffic *Moving* without wear, tear or repair

CLARK SHOCK ABSORBER DOOR

Special Formula Urethane-Cushioned Bumpers absorb shocks.

Save time and money with this lightweight, rigid Door that takes impact in stride. No strain at the flexible hinges, no warping, nothing to go out of whack. The **Bumper** takes the shock — not the **Door.**

Guaranteed Spring Return closes the door tightly. Flexible Neoprene Seals prevent loss of heat or cold—keep air temperatures exactly where you want them.

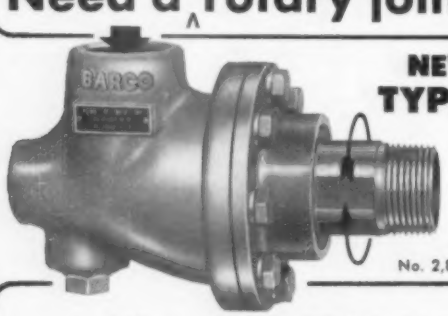
The low-cost Shock Absorber Door may be your solution to slowdowns and bottlenecks. Complete in one easy-to-install unit. Write for prices, full information. Specify size of opening.

CLARK DOOR COMPANY, INC. (since 1878)

520 Hunterdon St., Newark 8, N. J.

CIRCLE 260 ON READER SERVICE CARD

Better Need a rotary joint?



NEW TYPE C

Patent No. 2,836,439

-it's BARCO!

For countless applications, Barco's new Type C Rotary Joint will give you the best operating records you've ever had—*and for LESS COST!*

RESISTS SEAL RING BREAKAGE—The spherical seal ring is under compression, not *tension*, loading. Self-adjusting for wear. Seal withstands shock loads and alternating hot and cold service.

WIDE SPACED BEARINGS—Two, instead of one . . . increased bearing area. No lubrication required. Lowest friction.

MULTI-USE—One basic style for all services, single flow or syphon flow, quick availability from LOCAL STOCKS.

200 P. S. I. STEAM RATING—Heavy duty service at *no extra cost.* Eight sizes, ½" to 3". *Send for new Catalog 310 today.* **BARCO MANUFACTURING CO., 534E Hough Street, Barrington, Illinois.**

NEWS ABOUT SUPPLIERS

AIR REDUCTION CO., New York, N. Y.—Has named G. C. Cusack president of its division, the Pure Carbonic Co. The company has also named D. H. Spitzli and E. J. Gernt to the consulting staff for the fiber department. . . . **ALLIED CHEMICAL CORP., NATIONAL ANALINE DIV.,** New York, N. Y.,—Has named A. Viditz-Ward to the technical-service staff as specialist of textile dyes. His headquarters will be in Buffalo, N. Y. . . . **ALLIS-CHALMERS MFG. CO.,** Milwaukee, Wis.—Has promoted D. B. Scott to manager of the company's control department succeeding F. C. Ludington, who is retiring. . . . **AMERICAN CYANAMID CO.,** New York, N. Y.—Has named Q. M. Rhodes sales manager and C. N. Whitesides southern district manager for the textile-chemicals department. F. E. Anderson has been named group leader for yarns and fabric development for the Fibers Div.

ROBERT D. HILLMANN (left) has been appointed Western-district film-sales manager for the Packaging Div., Olin Mathieson Chemical Corp., New York, N. Y. ROBERT C. CLARK (center) has been named sales engineer in the New England district sales office of Taylor Fibre Co., Hartford, Conn. ROY S. FISHER (right) has been named administrative vice president of National Vulcanized Fibre Co., Wilmington, Del.

AMERICAN ENKA CORP., Enka, N. C.—Has elected M. R. Poston asistant secretary. . . . **AMERICAN VISCOSE CORP.,** New York, N. Y.—Has named E. L. Marston New York district sales manager for the Fibers Div. . . . **APEX CHEMICAL CO., INC.,** Elizabeth, N. J.—Has named M. L. Fillippeli, Sr., to the sales staff with headquarters in Greensboro, N. C. . . . **BENJAMIN BOOTH CO.,** Philadelphia, Pa.—Has appointed Hurley & Harrison, Greenville, S. C., to handle its entire line of card clothing and other products in North Carolina, South Carolina, and Virginia. . . . **CATALIN CORP. OF AMERICA,** Fords, N. J.—Has started production at its new acrylic plant. . . . **CHEMSTRAND CORP.,** Decatur, Ala.—Has named M. H. Morse to the newly created position of director of marketing administration. . . . **CIBA CO., INC.,** Fair Lawn, N. J.—Has appointed W. J. Langley to its New England technical-sales staff.

COURTAULDS (ALA.), INC., LeMoyne, Ala.—Has named J. D. Bell, Jr., to the sales department. . . . **CROWN CHEMICAL CORP.,** Providence, R. I.—Has named P. F O'Neil to the chemical-research staff and will be responsible for the company's manufacturing-process development. . . . **DAYTON RUBBER CO.,** Dayton, Ohio—Has changed its corporate name to The Dayco Corp. . . . **DIAMOND ALKALI CO.,** Cleveland, Ohio—Has appointed R. G. Richards, sales manager of its Plastics Div., to the newly created position of manager of planning and development. . . . **DIXON CHEMICAL & RESEARCH, INC.,** Newark, N. J.—With Southern Starch Industries, Inc., Plymouth, N. C., has formed a new chemical company, Dixon Southern Chemicals, Inc., at Plymouth. The new plant will produce corn starch.

DOW CHEMICAL CO., Midland, Mich.—Has announced a $30-million expansion program at its Louisiana Div., Plaquemine, La. The new expansion includes a plant for ammonia production, increases in production of chlorine, caustic soda, and vinyl chloride, and additions to power and steam generating facilities. The company has also announced that D. J. Davis

has been named to the New York fiber-sales office. J. L. Steen has been named to the sales staff of the textile-fibers office at Camden, N. J. T. W. Palmer has been named product manager handling chelating agents. J. T. Hastings has been promoted to assistant to the manager of the industrial sales division of Dobeckmun Co., a division. . . . **E. I. DU PONT DE NEMOURS & CO.,** Wilmington, Del.—Is renovating and modernizing its sales service and development facilities at its Dyes & Chemicals Div.'s Technical Laboratory at Deepwater Point, N. J., with completion slated for late 1961. The company has announced that M. D. Haney has been named assistant manager of the Southern-district office of the division.

FIRESTONE TIRE & RUBBER CO., Akron, Ohio—Has announced two appointments at the new Hopewell, Va., plant of its Firestone Synthetic Fibers Co. K. L. Edgar has been named vice president and S. G. Keiller, sales manager. . . . **FOOD MACHINERY & CHEMICAL CORP.,** New York, N. Y.—Has named D. C. Oskin to the newly created position of vice president of executive sales for the Chemical Divs. . . .

M. BOYLAN CARR (left) has been named director of sales for textile rayon and nylon yarns for American Enka Corp., New York, N. Y. HERBERT R. MILLER (center) has been appointed vice president of Century Chemical Corp.'s newly formed International Div., New York, N. Y. JOHN OWINGS FARISH (right) has joined Louis P. Batson Co., Greenville, S. C., and will service customers in eastern North Carolina, eastern Virginia, and eastern South Carolina.

GENERAL MILLS, CHEMICAL DIV., Minneapolis, Minn.—Has named M. C. Graham a New York sales representative. . . . **B. F. GOODRICH CHEMICAL CO.,** Cleveland, Ohio—Has appointed H. M. Sprock, Jr., market-development representative. . . . **HARSHAW CHEMICAL CO.,** Cleveland, Ohio—Has named Roy Hamilton to the sales force of Zinser Div. as assistant to the divisional manager. . . . **HARTFORD FIBRES CO.,** New York, N. Y.—Has moved its Southern sales office from Atlanta, Ga., to Charlotte, N. C.

HEYDEN NEWPORT CHEMICAL CORP., New York, N. Y.—Has named Dr. R. H. Barth manager of research responsible for the company's Garfield, N. J., laboratories. S. J. Spitz, Jr., has been named executive vice president of the company's Newport Industries Co. . . . **WALTER H. HINDLE, INC.,** New York, N. Y.—Is a newly formed consulting company that will serve the chemical and textile industries. The company's staff includes specialists in the field of fiber development. . . . **INTERNATIONAL LATEX CORP.,** Dover, Del.—Has named W. F. Gerrow, Jr., to the position of regional sales manager for the Southern area. . . . **KLAUDER WELDON GILES MACHINE CO.,** Philadelphia, Pa.—Has elected J. M. Giles, president; Thomas Bell, vice president, secretary, and general manager; R. M. Bell, vice president in charge of sales; F. T. Bell, vice president in charge of purchases; and Doris L. Giles, treasurer.

KOPPERS CO., INC., Pittsburgh, Pa.—And Sinclair Oil Corp., New York, N. Y., have formed a jointly owned corporation, the Sinclair-Koppers Chemical Co. The new company will own and operate a new petrochemical plant to be built in Houston, Tex.

LEESONA CORP., Providence, R. I.—Has elected R. P. Newell vice president of export sale. . . . **LOOM PRODUCTS CO.,** Greenville, S. C.—Is a newly formed company that manufactures textile hardwood accessories, and specializes in weaveroom supplies. Louise Kellet is executive manager and John Pruitt is superintendent of manufacturing. Both are former

***work*... says "Mark-O-Merit" •**

moves *faster*

when you use...

Shamrocks

Let a Shamrock representative check your plant. His constant contacts with mill operations can prove helpful to your problems.

Your Shamrock representative is a trained *specialist* in the application of Shamrock Canvas Baskets and Trucks to varied plant operations. He can help in suggesting efficient work flow systems—using standard or made-to-order Shamrock styles to fit your particular plant needs. *Get his helpful advice!*

Shown above is the Shamrock No. 19 Truck, leather reinforced around top rim and at ends of strips; this Shamrock is being used for transporting yarn on cones. For complete information, write direct or contact nearest sales office listed below. MEESE, INC., Madison, Indiana.

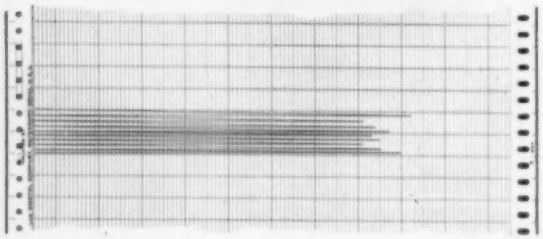
SALES OFFICES: NEW YORK—F. R. Tyroler, 55 West 42nd St., PE 6-0615; ATLANTA—W. E. Petway, 723 East Densley Drive, North Decatur, Ga., ME 6-3192; FORT WORTH—V. M. Hooton, 4220 Normandy Road, Tel. JEfferson 6-6564; WEST COAST—Gene Daniels Sales Co., P. O. Box 846, La Puente, Calif., YOrktown 4-1111. Export Mgr.—R. A. Auerbach, Easton, Pa. Cable Address: "Natly."

SHAMROCK

canvas baskets • hampers • trucks

TEST TIPS
FROM THE SCOTT LABORATORY

MULTIPLE TESTS PICTURE PRODUCT QUALITY



A series of individual fabric tear tests, recorded within a one-inch span on Scott's Model CRE electronic tester, produced this picture of product quality. Recorder pen returned to zero after each test. Note that a distribution curve can be plotted, from which maximums, minimums, medians, and other important quality control factors are easily discernible. Multiple tests of your textile products can be made as simply, precisely—and economically—with the versatile Scott Model CRE tester. *Write for CRE Brochure.*

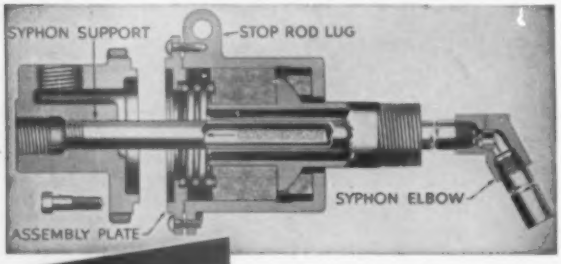
SCOTT TESTERS, INC., 95 Blackstone St., Providence, R. I.

SCOTT TESTERS
THE SURE TEST . . . SCOTT!

CIRCLE 261 ON READER SERVICE CARD

TRY THIS on your Dry Cans and 30" Slasher Cylinders

We'll gladly furnish a pair of these units for 90-day obligation-free trial in your mill. The Type SB2P is self-supporting, completely packless, needs no lubrication or adjustment. The Johnson Syphon Elbow permits the use of two straight pipes instead of an unwieldy curved syphon pipe, is hinged to pass right through the joint.



Johnson ROTARY PRESSURE Joints
First in the Textile Industry

Write for Catalog S-3002

Shows self-supporting Johnson Joints for all needs . . . on print cans, calenders, compressive shrinkage ranges, big 5' and 7' cotton slashers, dry cans, etc.

THE JOHNSON CORPORATION
814 Wood St., Three Rivers, Mich.

NEWS ABOUT SUPPLIERS Continued

members of the staff of the late John P. Batson. . . . **METRO-ATLANTIC, INC.,** Centredale, R. I.—Has named A P. Vellucci to the staff of the application and sales-service laboratories.

DELWIN F. SMITH (left) has been named sales representative for the Springfield and western-Massachusetts area for Lewis-Shepard Products, Inc., Watertown, Mass. GEORGE V. RITTENHOUSE (center) has been appointed district manager of the Industrial Sales Div. of Virginia Smelting Co., with headquarters in New York City. J. S. BRICE (right) has been named district manager of the Southeastern district of Goodyear Tire & Rubber Co.'s Chemical Div.

MINNEAPOLIS-HONEYWELL REGULATOR CO., Minneapolis, Minn.—Has transferred vice president H. F. Dever, head of the Industrial Products Group, from Philadelphia to Minneapolis. J. S. Locke, newly elected corporate vice president, has been named vice president and general manager of Brown Instruments Div. . . . **NATIONAL VULCANIZED FIBRE CO.,** Wilmington, Del.—Has elected H. C. Guhl vice president in charge of engineering. . . . **OLIN MATHIESON CHEMICAL CORP.,** New York, N. Y.—Has named Vernon Woodside manager of sales development for heavy chemicals for the Chemicals Div. H. A. Hanson has been transferred to the New York-New England sales district of the company's Packaging Div. . . . **PENNSALT CHEMICALS CORP.,** Philadelphia, Pa.—Has named R. J. Eastman to head special projects in its new Marketing-Planning Dept. R. W. Schultis, Jr., has been named to work with Mr. Eastman on marketing studies of new markets, products, and fields. The company has also announced that Penn-Olin Chemical Co., is being formed as a joint subsidiary of Pennsalt and Olin Mathieson Chemical Corp. The subsidiary will produce sodium chlorate and other chlorate compounds.

HORACE T. POTTS CO., Philadelphia, Pa.—Has named D. C. Taylor assistant to the president, responsible for research and development. J. W. Reckard has been named vice president in charge of all company sales and manufacturing operations, and J. A. Stringer has been named vice president responsible for financial and purchasing functions. G. A. Parker, Jr., has been named sales manager. . . . **PUTNAM CHEMICAL CORP.,** Beacon, N. Y.—Has promoted Hans Beckedorf to technical demonstrator. . . . **ROHM & HAAS,** Philadelphia, Pa.—Has named Dr. C. H. McBurney director of research. . . . **SACO-LOWELL SHOPS,** Boston, Mass.—Has obtained exclusive rights to sell and service in the USA the Opener-Cleaner-Blender and the Duo-Jet Cleaner manufactured by Davidson-Kennedy, Atlanta, Ga. The New England and Canadian sales offices have been moved from Boston, Mass., to Saco, Me.

L. SONNEBORN SONS, INC., New York, N. Y.—Has changed its named to Sonneborn Chemical & Refining Corp. . . . **MORRIS SPEIZMAN EXPORT CORP.,** Charlotte, N. C.—Has named Nora Leza assistance export sales manager. . . . **STANLEY STEEL STRAPPING, DIV. OF THE STANLEY WORKS,** New Britain, Conn.—Has named A. J. Skorupski sales representative in northern Illinois. . . . **STOWE-WOODWARD, INC.,** Newton Upper Falls. Mass.—Is building a new plant for manufacturing rubber covering of rolls in Neenah, Wisc. . . . **TAYLOR FIBRE CO.,** Norristown, Pa.—Has named J. A. Morris assistant sales manager. . . . **WARNER & SWASEY CO.,** Cleveland, Ohio—Has promoted G. M. Phoenix and R. O. Perrault to branch managers. Mr. Phoenix's headquarters are in Needham, Mass., and Mr. Perrault's headquarters are in Ardmore, Pa.

NEWS ABOUT MEN

F. G. Bemis has been elected chairman of the board of Bemis Bro. Bag Co., St. Louis, Mo. Judson Bemis has been named president and chief executive officer. F. G. Bemis, Jr., has been appointed director of allied operations for the company.

Alonzo F. Bonsal, Joshua L. Baily & Co., Inc., New York, N. Y., has been re-elected chairman of the board of The Association of Cotton Textile Merchants of New York.

Forbes Bradley, vice president of West Point Manufacturing Co., in charge of operations of the Columbus, Ga., mill division, has retired after 31 years of service.

J. Kenneth Brown has been named assistant manager of Union Bleachery, Greenville, S. C.

C. M. Burchard has been appointed a vice president of Deering Milliken & Co., New York, N. Y.

J. E. Cobb has been appointed manager of Gastonia Weaving Co., Gastonia, N. C. He succeeds Marshall Gayle who has joined Watson Desmond Co., Charlotte, N. C.

Howard P. Derrickson has been named manager of the Baltic Mills Co., Baltic, Conn.

Everett C. Drake has been named president of the newly formed Veriset Association, New York, N. Y., separate subsidiary of M. Lowenstein & Sons, Inc.

Paul M. Felker, Jr., has been appointed quality-control director of The William Carter Co., Needham Heights, Mass.

Clarence Fisher, superintendent of the Jonesville Plant of J. P. Stevens Co., Jonesville, S. C., has been named to a similar position at the Roanoke Rapids, N. C., plant. Ellis Ball is succeeding Mr. Fisher at the Jonesville Plant.

Francis B. Galligan has been named production manager at Firestone Textiles, Gastonia, N. C. He succeeds Nelson Kessell who has retired after 35 years with the company.

James L. Gardner has been named to the board of directors of Highland Park Mfg. Co., Charlotte, N. C., succeeding the late Harvey W. Moore. Mr. Gardner heads the finished-goods department of J. P. Stevens & Co., Inc., New York, N. Y.

Gary Gray, former night overseer of carding and spinning at Riegel Textile Corp., Ware Shoals, S. C., has been named overseer of the card

SPEARHEADED NEW STANDARD

George G. Sommaripa, who has been credited wth conceiving and nursing to maturity "ASA L22, Textiles" (the new standard for minimum fabric performance described in the "Textile Business" section of this issue), is a refugee of the Russian revolution. His father was a judge and banker, one of the Russian nobility imprisoned by the Bolsheviks.

George had attended the Russian military academy and, upon his arrival in the United States, entered Harvard Business School, from which he graduated in 1924. He became a vice president of the Silk Association of America, served on the War Production Board, and joined the American Standards Association shortly after the war. He will retire from the Association when L22 is fully launched.

BETTER BLENDING by WEIGHT CONTROL . . .

1. Combine weigh pan dumps, ounce by ounce, in an accurate sandwich on a slow moving horizontal SYNCHROVEYER . . .
2. Cut vertical cross sections inch by inch through the sandwich with the fine pinned beater of the SYNCHROBLENDER . . .
3. The result from actual experience can be a 25% reduction in day to day variations, which means better yarn quality at higher plant efficiency.

No additional floor space, connected horse power, or labor is required.

Write or contact us for further and more complete information:

U. S. Sales Agents:
PARROTT and BALLENTINE, Inc.
3440 Augusta Rd., Greenville, S. C.

FIBER CONTROLS CORPORATION
BOX 1358 GASTONIA, NORTH CAROLINA

CIRCLE 157 ON READER SERVICE CARD 157

Smoothness Tester

If you want

Fastest Break-In

install the

Smoothest Rings

Our rigid maintenance of specified micro-inch finish assures the most advanced standard of smoothness available in spinning rings today.

WHITINSVILLE (MASS.) SPINNING RING CO.

DIAMOND FINISH

Makers of Spinning and Twister Rings since 1873

Rep. for the Carolinas & Va.: W. K. SHIRLEY, P.O. Box 406, Belmont, N. C.
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CIRCLE 262 ON READER SERVICE CARD

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Engineers

TEXTILE MILLS AND OTHER INDUSTRIAL PLANTS

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ELECTRICAL, STEAM, DIESEL AND HYDRAULIC ENGINEERING
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CONSTRUCTION SUPERVISION

CIRCLE 263 ON READER SERVICE CARD

INDUSTRIAL ENGINEERS

- MODERNIZATION PROGRAMS
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- SPECIAL REPORTS

RALPH E. LOPER CO.

Greenville, S. C., Dial CEdar 2-3868 • Fall River, Mass., Dial OSborne 6-8261
Specializing in Textiles Since 1914

room succeeding Norman Jenkins. Mr. Jenkins has resigned to become superintendent of preparations at the Inman Mills, Inman, S. C.

Homer G. Hall has been named assistant manager of the synthetics division of Firestone Textiles, Gastonia, N. C.

L. O. Harris, Jr., has been promoted to vice president of sales for Fulton Cotton Mills, Atlanta, Ga.

P. E. Hilley has been promoted to assistant head of Southern Spinning Mills, Clarkdale, Ga.

W. A. Hunt has been named plant manager of Johnston Mill, Johnston, S. C.

J. E. Jeter has been elected a vice president of Standard Knitting Mills, Knoxville, Tenn.

Rama H. King has retired as manager of the Lancaster, S. C., plant of Springs Cotton Mills. He will be succeeded by V. A. Ballard, manager of the company's Gayle plant.

William Laine has been named vice president in charge of upholstery sales for Massachusetts Mohair Plush Co., New York, N. Y.

William Lowndes III has accepted the position of plant manager of Pacolet Yarns, Inc., Spartanburg, S. C.

A. W. Marino, Jr., has been named assistant to the treasurer in the synthetic-fiber division of Thompson Textiles, Inc., Charlotte, N. C.

Mrs. Sylvia Martin has been named to the board of directors at Bates Mfg. Co.,

WILLIAM A. DRISLER, JR., has been named executive vice president of Burlington Hosiery Co. with responsibility for all company operations in the men's and children's field.

Lewiston, Me. She succeeds her son who has entered the stock-brokerage business.

William E. McDaniels has been named to the board of directors at The William Carter Co., Needham Heights, Mass.

Allyn B. McIntire has retired as vice president of Pepperell Mfg. Co., Boston, Mass.

Wallace E. McGrath has been named general manager of Lowell Bleachery, Inc., St. Louis, Mo.

J. F. Miller has retired as president of Miller Hosiery Mills, Concord, N. C. His son, Don Miller, will succeed him as president.

George O. Porter has been named superintendent of the Seneca Plant, Utica-Mohawk Group of the Cotton Div. of J. P. Stevens & Co., Inc., Seneca, S. C. He succeeds Hugh Hurley who has been promoted to manager of the company's Exposition Plant, Atlanta, Ga.

GARNETT C. KINCAID (left) has been elected treasurer of Magnet Mills, Inc., Clinton, Tenn. EDWIN L. BROWN (center) has been promoted to assistant vice president, and L. H. CONNATSER (right) has been named assistant secretary-treasurer of the company.

Raymond W. Reed has been promoted to executive vice president of Southern Knitwear Mills, Inc., Charlotte, N. C.

George C. Ridenhour has been promoted to superintendent of the cotton division of Judson Mills, Greenville, S. C.

F. Fuller Ripley has been elected to the newly created position of vice president in charge of development of Troy Blanket Mills, Troy, N. H.

Albert Sands has become sole owner and president of Sanco Piece Dye Works, Inc., Phillipsburg, N. J.

Howard Spry, plant manager of Ivey Weavers, Inc., Hickory, N. C. has resigned to assume full-time duties as president of Spry-Watson Mills, also in Hickory.

Earle R. Stall, Jr., has been named assistant vice president of Cone Mills Corp., Greenville, S. C. Mr. Stall has been with the Dunean Plant of J. P. Stevens & Co., Inc., before joining Cone in 1955.

Daniel C. Stark has been appointed director of styling for Callaway Mills, Inc., New York, N. Y.

Horace N. Stevens, Jr., has been appointed vice president of J. P. Stevens & Co., Inc., New York, N. Y.

William C. Summersby has retired as vice president and general manager of The Springs Cotton Mills, Lancaster, S. C. John L. Hallett succeeds Mr. Summersby as general manager.

Martin G. Wallace has been named process-development manager at Wellman Combing Co., Johnsonville, S. C.

E. F. Wiler has been named a vice president of Cannon Mills Co., Kannapolis, N. C.

Textile World

OBITUARY

William W. Allan, 64, executive vice president and treasurer of Baltic Mills Co., Baltic, Conn.

Mrs. Maude Boltz, president of Jacob Boltz Knitting Mills, Pottsville, Pa.

Julian Butler, 61, vice president of Morgan Mills, Laurinburg, N. C.

Charles P. Drumm, 61, chairman of the board of Albany Felt Co., Albany, N. Y.

Morgan C. Edward, 58, a retired vice president and director of J. P. Stevens & Co., Inc., Greensboro, N. C.

C. Cornelius Hamill, 80, retired weaving superintendent for the former American Woolen Co., Norwich, Conn.

Avery W. McMurry, 87, founder of the Belmont Cotton Mill, Shelby, N. C.

Edward Sauvain, 77, assistant treasurer of Cannon Mills Co., Kannapolis, N. C.

Edward G. Sayee, 45, purchaser of yarns and threads for The William Carter Co., Needham Heights, Mass.

Ellison Smyth, 57, former president of the former Balfour Mills, Balfour, N. C.

J. N. Sumerall, 61, president and general manager, Lafar Mills, Gastonia, N. C.

William M. Weaver, Jr., head of the Purchasing Dept., Bibb Mfg. Co., Macon, Ga.

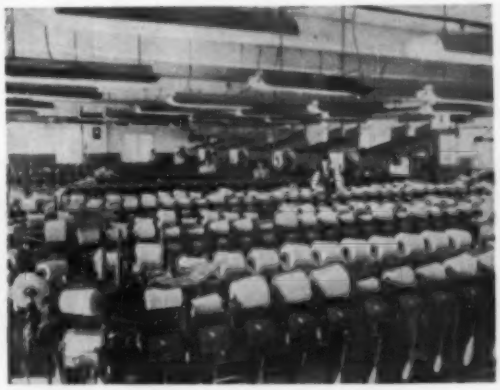
Aaron Weitzenhoffer, 65, a founder and secretary-treasurer of Seminole Mfg. Co., Columbus, Miss.

Richard A. Willis, Sr., 89, former executive vice president and treasurer of Manetta Mills, Lando, S. C.

ABBOTT MACHINE CO., Inc.

WILTON, NEW HAMPSHIRE

SOUTHERN SALES AND SERVICE: GREENVILLE, S. C.



AUTOMATIC CONE OR TUBE WINDERS—for winding all types of spun yarns on cones or tubes for Warping, Dyeing, Twisting, Quilling, Knitting or Sales Packages.

SPECIAL WINDING UNITS FOR KNITTING CONES—include a new slub catcher and a new waxing attachment, which uses standard size commercial wax disks.

LARGE PACKAGES—can be wound up to 11½ inches in diameter for use on shuttleless looms and looms that require a cone supply.

MODEL I AUTOMATIC QUILLER—for coarse count cotton, worsted, wool and other spun yarns, delivers full loom bobbins automatically into boxes, onto pinboards, on wide belt conveyor for inspection of bobbins, or into specially made magazines for automatic loom feeder.

MODEL II HIGH SPEED AUTOMATIC QUILLER (10,000 R.P.M.)—for winding fine count cotton and synthetic yarns of either spun or filament construction.

Also delivers full loom bobbins automatically into boxes, onto pinboards or wide belt conveyor for inspection of bobbins.

Under some conditions one operator can run two or three machines and produce upwards of 2500 full loom bobbins per hour.

ABBOTT FULLY AUTOMATIC RADIAL QUILLER, MODEL II—especially designed for flexibility, is very versatile and particularly well adapted for winding numerous small lots of filling.

Winds coarse or fine count cotton, worsted, wool, rubber and various synthetic yarns, either spun or filament.

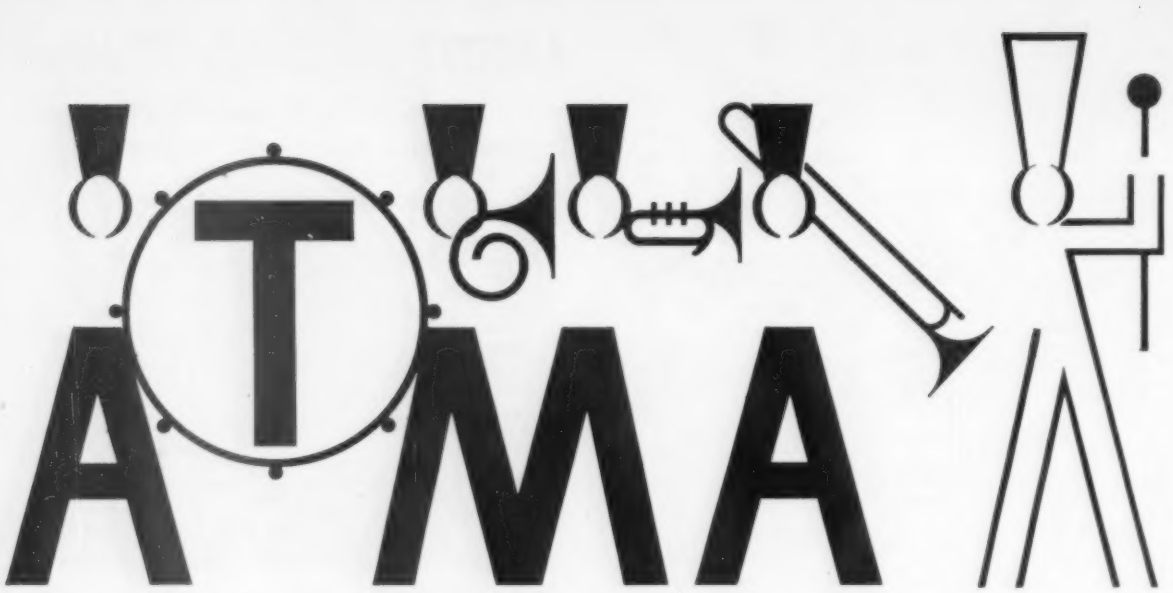
Automatic delivery of full loom bobbins onto pinboards, wide belt conveyor for inspection of bobbins, into baskets or other type containers.

Automatic delivery of bobbins can also be supplied whereby full loom bobbins from the individual cones and spindles are delivered into separate containers, which is highly desirable for loom finish yarns and the like.

The Radial Quiller can also be equipped with measured yardage attachments to give accurate, uniform bobbin yardage, as required for two-shuttle looms.

A wide range of spindle speeds for approximately 1000 R.P.M. to 10,000 R.P.M. is obtainable.

One operator can run several machines and thus produce up to 2000 loom bobbins, or more, per hour.



Parade of Progress

American Textile Machinery Exhibition – International

Preview in TEXTILE WORLD – MAY ISSUE

May 23-27, 1960 is *the big* week in Convention Hall, Atlantic City, New Jersey—it's the week of the largest, most comprehensive specialized textile trade fair ever held in the United States.

New fibers, new yarns, new finishes and new consumer demands have created many technological and scientific problems that *must* be solved. New developments in equipment and manufacturing techniques to help provide the answers to many of these problems will be shown at the ATMA show. TEXTILE WORLD allows you to preview the show through the pages of the May issue.

The May issue will provide you with a list of exhibitors, their locations at the show, and a "quick look" at much of the equipment to be shown by means of the "Guide to Exhibitors" —a special section which will include *the ads of exhibitors.* This issue is *must* reading for all textile men interested in keeping up with fast moving technologies of efficient mill operation—*particularly those who will be unable to attend the show.*

Advertising forms close April 5th, 1960.

Visit us at the Show—Booths 406-407

Textile World

A McGRAW-HILL PUBLICATION, ABC ABP

330 West 42nd St., New York 36, N. Y.

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

DISPLAYED RATE

The advertising rate is $14.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

EMPLOYMENT OPPORTUNITIES — $33.80 per inch subject to agency commission.

INFORMATION

DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

An ADVERTISING INCH is measured 7/8 inch vertically on one column, 3 columns—30 inches—to a page.

UNDISPLAYED RATE

(Not available for Equipment Advertising) $1.50 a line. Minimum 3 lines. To figure advance payment count 5 average words as a line. (See ¶ on Box Numbers.)

POSITION WANTED undisplayed rate is one half of above rate, payable in advance.

BOX NUMBERS count one additional line.

Send New ADS or Inquiries to Class. Adv. of Textile World, P. O. Box 12, New York 36, N. Y., For May Issue Closing April 15th

ADDRESS BOX NO. REPLIES TO: Box No.
Classified Adv. Div. of this publication.
Send to office nearest you.
NEW YORK 36: P. O. Box 12
CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 4: 68 Post St.

POSITIONS VACANT

Export — Experienced textile machinery. Fluent German or French. P-3559, Textile World.

Textile or Industrial Engineer with minimum 3 years experience in woven textiles time studies and rate setting. Some mechanical background for assignments in general plant engineering. Age 25-32. Challenging position with well rated mid-west company. Submit complete resume. P-3883, Textile World.

POSITIONS WANTED

Woven Labels. Desire responsible position in woven label concern. Over 30 years in labels, trimmings, as foreman and maintenance. Presently employed. PW-3477, Textile World.

Foreign Assignment Wanted: Qualified Finisher & Bleacher with over seas experience, 39 yrs. old, in excellent health. Capable of setting up departments and training personnel. PW-3415, Textile World.

Position overseer warp preparation 20 years experienced on cotton and synthetic B. C. spooling warping tying in abbott winding quilling and slasher room. PW-3313, Textile World.

Production manager experienced Jacquard Shaft-work designer specialty fabrics graduate organizer seeks management position. Small progressive company preferred. Beginning forties. Will go abroad. Speaks English-German. PW-3986, Textile World.

2 Men, Veterans, graduating in June with B.S. in Textile Engineering from the Philadelphia Textile Institute, desire positions in Textile Industry with interests in product development. Willing to relocate. PW-3821, Textile World.

Textile Chemist—M.S.—strong latex background—cellulose conversion, bleaching, vat dyeing—33 years old—will relocate. PW-4004, Textile World.

'60 Textile graduate with nylon engineering, tire cord processing, and textile manufacturing experience desires position with synthetic producer in a southeastern state. PW-3990, Textile World.

5 years laboratory experience; 20 years dyeing, bleaching, finishing, circular knit goods; 10 years bleaching, dyeing, trico knit, natural synthetic, in beck, open and, pressure type Burlington machines. PW-4008, Textile World.

SELLING OPPORTUNITY WANTED

Australian Manufacturers' Representative, very well established, seeks agency from reputable and competitive firm. Trade Reference: Emerson-Lund Mercantile Agency Pty. Ltd., 19, Queen St., Melbourne; Bankers: Commonwealth Trading Bank of Australia, Collins St., Melbourne. Replies: Mr. F. Jacoby, 238, Elizabeth St., Melbourne.

BRITISH REPRESENTATION AVAILABLE
Very old well known British Textile firm selling piece goods of Cotton, Man-Made Fibres & Blends, wish to contact leading U. S. Manufacturers to represent on an agency basis. Strong selling force throughout the British Isles and Europe, calling on all leading firms in Mens, Womens & Childrens making-up trades, chain stores etc. Experienced administrative staff & warehouse accommodation available.

RA-3947, Textile World
Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

BUSINESS OPPORTUNITY

Seamless bag patent for sale patent No. 2-471-380. Product finished on loom except cutting operations priced to sell BO-1605, Textile World.

TEXTILE ENGRAVING EQUIPMENT

Let us help you with your engraving problems, equipment, and training of your personnel. Location may compel you to have your own print engraving plant—if so, we can offer:

A. Complete engraving installations.
B. Training available either at your plant or any one of several locations in the U.S., Canada or Mexico.
C. Partial installations with various services.
D. Partial list of new & used equipment available for immediate shipment:

1. Cameras
2. Polishing lathes
3. Turning lathes
4. Pantograph machines
5. Photo copy machines
6. Electric Etch machines
7. Die and mill machines

For further information write, call or wire

ABC PHOTO GRAVURE SUPPLY Corp.
125 Fifth Ave., Paterson, N. J., U.S.A.
Wire ABCENG—Call Armory 4-4416

CIRCLE 400 ON READER SERVICE CARD

"Put Yourself in the Other Fellow's Place"

TO EMPLOYERS
TO EMPLOYEES

Letters written offering Employment or applying for same are written with the hope of satisfying a current need. An answer, regardless of whether it is favorable or not, is usually expected.

MR. EMPLOYER, won't you remove the mystery about the status of an employee's application by acknowledging all applicants and not just the promising candidates.

MR. EMPLOYEE you, too, can help by acknowledging applications and job offers. This would encourage more companies to answer position wanted ads in this section.

We make this suggestion in a spirit of helpful cooperation between employers and employees.

This section will be the more useful to all as a result of this consideration.

Classified Advertising Division

McGRAW-HILL PUBLISHING CO., INC.
330 West 42nd St., New York 36, N. Y.

Can You Spare Just a Moment?

Let us tell you about this unusual Life-Career opportunity with one of the country's highly respected suppliers of fabrics for industrial use.

Our products are supplied principally to the Paper Industry—well known for both stability and growth. (It seems people *always* need paper, and more and more uses are being found for it every day!)

These Fabrics are highly engineered and require very special skills and manufacturing techniques.

If you are an expert in
FULLING METHODS
or
LOOM ENGINEERING

And if you are a graduate engineer or have equivalent experience, we are sure that you will be intrigued by the work being done in your field at our excellently staffed and equipped research facilities near Albany, New York.

Please write us about your experience and if it fills our need, you will be invited to visit our headquarters at our expense and at a time which is most convenient for you.

All inquiries will be handled with the utmost confidence and will be acknowledged.

Please address your correspondence to the attention of the Vice-President for Research:

HUYCK FELT COMPANY
Division of the Huyck Corporation
RENSSELAER, NEW YORK

Additional Employment Opportunity Advertising on Pages 162 & 163

TEXTILE MACHINERY FOR SALE

5—Lummus Blending Feeders, 38½" wide. 1957
1—Lummus Double Hydraulic Baling Press, 26x54", chain. Age 1948
8—Aldrich 2 Beater Pickers, 40" wide. Age 1953-57
33—Platt 40" Flat Cards. 1936
100—Whitin Model F Spinning Frames, 256 & 272 Spdls. 3" ga., Casablanca Long Draft, 36" frame
20—Saco-Lowell Model R-2 Spinning Frames, 240 spindles, 3½" gauge, Roth Long Draft, 38" frame, ind. motors. Age 1946
1—Barber Colman Automatic Spooler, Model KK, Type C, 162 pocket
208—Whitin Schweiter Hi-Speed Quillers, Model MS, Age 1947-1950
3—Scharer Hi-Speed Quillers, 10 spindles each. Age 1953-55
1—Bachman-Uxbridge Gentle Air Slasher, Model A, Serial #59, 85" Headway
1—Hibbert Hot Air Slasher, 72" headway, 8 beam creel. Age 1950
20—Draper Model X 60" Looms, 4 cans, slide bar stop motion
20—Draper Model D 66' Looms, cam type, slide bar stop motion
1—Cocker Indigo Long Chain Dyeing Range, 44-stainless steel Dry Cans 142" wide. 1948.
4—Venango Stainless Package Dye Units. 3—500 lbs., 1—300 lbs. Age 1948
1—Parks & Woolson Hi-Speed Davidson Shear, 3 blades 66½" wide. Age 1947
15—Unistel S.S. Dry Cans 50", 35 lb. pressure. 1950
2—S.S. Enclosed Dye Jiggs, automatic Tensionless. 1957
1—R.B. & F Print Machine, 4 color, 60" wide. 1957

Republic
TEXTILE EQUIPMENT COMPANY
40 Worth Street, New York 13, N. Y. • COrtlandt 7-1591
• APPRAISALS • PURCHASE AND SALE TEXTILE MACHINERY • LIQUIDATION OF MILL PROPERTIES •

CIRCLE 401 ON READER SERVICE CARD

BIALEK'S BEST BUYS

96—C&K, S-6, 60", "Big Six", 2 x 1
60—C&K, S-6, 58", 4 x 1
6—C&K, S-6, 58", 2 x 1
WHITIN AUTO QUILLERS
2—Cocker Tricot Warpers with Reiner 600-end Creels
Milton Tricot 21" x 21" Beams
2—Abbott Quillers, 120 sp., 1951, Pinboard Attachment
1—Abbott Quillers, 100 sp., 1953.
All with auto bobbin hoists, converters
Hermas 62" Shearer
Sipp 84" Hi-Speed Warper
New Tricott Opener, Tacker

THEODORE BIALEK & CO.

6704 Empire State Bldg.
NEW YORK 1, N. Y.
Longacre 3-4978-9

230 Belmont Ave.
HALEDON, N. J.
Lambert 3-5886-7

CIRCLE 402 ON READER SERVICE CARD

IMPROVE QUALITY WITH MODERN MACHINERY

2—Saco Lowell Vertical Openers
2—Kitson 2 & 3 beater S.P. pickers, blending
50—Whitin 40" Flat Top Cards, 12" coilers
40—Whitin 45" Flat Top Cards, 12" coilers
10—Whitin Model J, 12 head, combers, 1951
4—Whitin Silver Lappers, 9¼" Lap, 1949, MD
12—Deliveries Bi-coil draw., 14" coilers, 1949
30—Veeder Root 3-shift hank clocks, 2⅝" roll
1—Sipp 72" mag. warper, 4 speed drive
1—Ramsey 4 beam ribbon warper, M.D.
2—Sipp 600 end magazine cone creels
1—Geesner 72" napper, 20 roll, single acting
2—40 & 80 gal. ss. jacketed tanks
1—Eastern ¾ HP port. mixer, 5' ss. shaft
18—Rubber covered rolls, up to 117" face
1—42 overhead Scutcher, 3 bar tension, swing folder
3—Terrell roving bobbin strippers, M.D.
1—Sansone Cot Buffing machine
2—#44 Roto-Coners, steel drums, waxing
2—Abbott 12-sp. Radial Quillers, pinboarding
80—Barber-Colman beams, 68½ x 30 x 12
90—Barber-Colman beams, 54½ x 30 x 12
8—B-C port. Warp tying mach., LC, LS, LL, K
5—C&K W-2 looms, 92", 4x1, M.D.
16—C&K W-3 looms, 88", 4x1 box, M.D.
10—C&K W-2 looms, 82", 4x1 box, M.D.
1—Cloth inspec. mach., with Kaumagraph attach.
1—S/L Slasher, 7' x 5' cyl., controls M.D.
1—Elliott & Hall 47½" Jaw Cloth Folders, air-lift
7—Halton 600 Jacquards, single cyl. dbl. lift
4—48" ss Dye Jigs, Tandem operated
1—Tennant Model J floor machine
2—Troemner Analytical balances
700—AMCO #5 Humidifier heads
300—Complete Brown Spring Tops
200—Veeder-Root 3-shift reset pick counters
10—Diehl transmitters, 1 HP, 1800, 550/3/60
200—Diehl 1 HP loom motors, 1200, 220/3/60
1—Poland 26" Extractor, copper basket, M.D.
1—C&M 48" Railway Rolling & Sewing machine.

MACHINERY SALES CORP.
131 Court Street, P. O. Box 367
New Bedford, Mass. WYman 9-6273

CIRCLE 403 ON READER SERVICE CARD

EMPLOYMENT OPPORTUNITIES

(Continued from preceding page)

Loom Engineering Experts

What do you want most for your family—

Better Schools?
Better Living—Country and City?
Better Facilities for Recreation?

Get these PLUS the opportunity to advance professionally and for personal recognition with HUYCK.

Look for our ad page 161 in this issue entitled
"CAN YOU SPARE JUST A MOMENT?"

WANTED

EXPERIENCED SUPERINTENDENT

Capable of taking complete charge of jacquard and shaft weaving mill on synthetics and cotton yarns, located in Pennsylvania.

State experience, age and references. Reply

P-3949, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

MANUFACTURER'S REPRESENTATIVE

Wanted immediately by nationally-known textile chemical company to contact mills, finishers and converters on the Pacific Coast. Must be established and currently calling on this trade. Send resume to . . .
RW-3946, Textile World
Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

FOR ADDITIONAL INFORMATION

About Classified Advertising

Contact The McGraw-Hill Office Nearest You

ATLANTA, 3
1301 Rhodes-Haverty Bldg.
JAckson 3-6951
W. CRANK

BOSTON, 16
350 Park Square
HUbbard 2-7160
M. J. HOSMER

CHICAGO, 11
520 No. Michigan Ave.
MOhawk 4-5800
W. HIGGENS

CLEVELAND, 13
1164 Illuminating Bldg.
SUperior 1-7000
W. B. SULLIVAN

DALLAS, 2
1712 Commerce St.,
Vaughn Bldg.
RIverside 7-5177
GORDON JONES
F. E. HOLLAND

DENVER
1700 Broadway
Tower Bldg.
ALpine 5-2981
J. PATTEN

DETROIT, 26
856 Penobscot Bldg.
WOodward 2-1793
J. R. PIERCE

LOS ANGELES, 17
1125 W. 6 St.
HUntley 2-5450
R. YOCOM

NEW YORK, 36
500 Fifth Ave.
OXford 5-5959
H. T. BUCHANAN
R. P. LAWLESS
T. W. BENDER

PHILADELPHIA, 3
Six Penn Center Plaza
LOcust 8-4330
H. W. BOZARTH
H. NICHOLSON

PITTSBURGH, 22
1111 Oliver Bldg.
EXpress 1-1314
P. PIERCE

ST. LOUIS, 8
3615 Olive St.
JEfferson 3-4867

SAN FRANCISCO, 4
68 Post St.
DOuglas 2-4600
S. HUBBARD

EXCLUSIVE SELLING AGENTS

MODERN THROWING MILL

10—Model 550 SUPERLOFT MACHINES . . 216 Spindles Each

2—Model 551 Superloft Machines
212 Spin. ea. . . 1958 . . Hi Speed
9—Atwood Model 10-B . . 100 Spindles ea.
7" Gauge . . Late Models . . Bottle Wind
120—Atwood Model 50 Coners . . Late Type
S.S. Troughs & Rolls . . Like New
32—Utility Twisters . . 156 Spindles
1952 Models . . Pack Delivery
1—Complete Size Mixing Unit . . Comp/with
Centrifuge . . Mixers . . Tanks, Etc.
7—Fluflon Machines . . 224 Spindles Ea.
Installed 1955 . . 22 oz. Pack. . . Complete
8—U. S. Face Drive Twisters . . 168 Spin. Ea.
8" Ga. . . 1953 . . Like New Condition
6—U. S. Hi Speed Redraws . . 1953 . . 88 and 92
Spindle . . Complete
1—Sample 550 Superloft—16 Spindles
1—Sample Fluflon Machine—16 Spindles
1—Complete Lab. . . Numbering Machines . .
Balances . . Twist Tester . . Many More

MISCELLANEOUS EQUIPMENT

40,000 Bobbins for above machines . . Bobbin Boards . . Shipping Equipment . . Trucks
2—Worthington Air Conditioners 5 & 7½ H.P. . . Office Equipment . . S.S. Storage Tanks

WRITE—PHONE—WIRE FOR DETAILED LISTING

Due to consolidation of Hemmerich Corp. to its Penna. location the above equipment is offered F.O.B. Murphy, North Carolina.

Wm. Rabinowitz & Sons

TEXTILE MACHINERY, BOBBINS & SUPPLIES

Gordon & Jordan Streets • HEmlock 4-9525 • Allentown, Pa. • Cable: RAB

CIRCLE 404 ON READER SERVICE CARD

EMPLOYMENT OPPORTUNITIES

(Continued from pages 161 & 162)

CHEMIST

Growing Chicago manufacturing company interested in graduate chemist or chemical engineer for product development. We will offer the person selected, interesting diversified assignments, pleasant working relationships, and opportunity for advancement and security. Our people enjoy a full benefit program plus liberal profit sharing. Some experience in any one of the following will be helpful.

1. Textiles 2. Adhesives 3. Coatings 4. Paints or Inks 5. Dye Stuffs

Because this work represents new development activities in our organization the possibilities are such that qualified persons would be wise to investigate our opportunities for them. All replies will be handled in complete confidence.

P-4000, Textile World
520 N. Michigan Ave., Chicago 11, Ill.

PLANT SUPERINTENDENT NEEDED

. . . for sizeable manufacturing firm in the Los Angeles area. Position requires organizational and supervisory ability as well as production know-how. Engineering background considered an asset but not essential. Generous employee benefits. A choice opportunity to advance with aggressive subsidiary of an international corporation.

P-3854, Textile World
68 Post St., San Francisco 4, Calif.

WANTED:

PRACTICAL DYE MAN

Fast growing central California carpet mill needs experienced, practical dye man able to develop own formulas and supervise shift. Wool background necessary. Write

P-3982 Textile World
68 Post St., San Francisco 4, Calif.

WANTED

PLANT ENGINEER

Have position for qualified man who knows thoroughly general factory maintenance, including electrical, high pressure boiler, machine shop work, welding, elevator maintenance, some electronics. Prefer man with some college education and plenty of practical experience. Located in West Tennessee. Write

P-4036, Textile World
520 N. Michigan Ave., Chicago 11, Ill.

FULLING EXPERTS

What do you want most for your family—

Better Schools?
Better Living—Country and City?
Better Facilities for Recreation?

Get these PLUS the opportunity to advance professionally and for personal recognition with HUYCK.

Look for our ad page 161 in this issue entitled

"CAN YOU SPARE JUST A MOMENT?"

FOR SALE

TOP VALUES IN TEXTILE MACHINERY

1—BATCHER, Simpson, 80", 2 Roll, 9½" dia. Knurled Steel Rolls.
1—BEATER, MAWACO, High Pile, 65", Adjustable leton.
1—BRUSHING MACH., McCreary, 60", B.B., Adjustable Rest, Suction Pickup.
1—BRUSHING MACH., P&W., 66", 2 Section, 4 Roll, 8½" dia. B.B. Brushes.
1—AIR COMPRESSOR, Keystone, Horiz., 100# Pressure, 200 lb. tank, M.D.
1—CLOTH CONDITIONER, Sjostrom, 64", w/Worthington Pump and Folder.
1—CONDITIONER & STEAMER, R&L., Yarn, S.S. Interior, Auto. Controls.
3—CHINCHILLA MACH., Kenyon, Hunter, 14" x 63" platens.
1—CEILING CONDENSER, P&S., Single Cylinder, type 442, 18" x 36".
1—SEMI-DECATUR, Gessner, Perf. Cyl. 72" x 36" dia., Nash #2 V. Pump, M.D.
2—CLOTH DOUBLERS, P&W., 66", Yardage Counters and Motor Drives.
1—DESPECKING MACH., P&W., 89", Scray, Folder, 10 Hp. Motor Drive.
1—VACUUM EXTRACTOR, Gessner, 72", w/Nash #3 Pump, V.S. PIV Drive.
2—PR. AIR GUIDERS, mounted on adjustable stands, 78", 80" max. width.
3—INSPECT., MEAS. & WIND. Machines, Blake, Measuregraph, P&W., 58 to 66".
1—PIECE DYE KETTLE, R. Hunt (Trushade), S.S., 7', 6 String, Open type.
67—AUTO. LOOMS, C&K., Wi, 82", 4 x 1 Box, 25 H.H., E.W.S.M.
16—AUTO. LOOMS, C&K., 82", 4 x 1 Box, 20 H.H., E.W.S.M.
4—AUTO. LOOMS, C&K., 92", 4 x 1 Box, 25 H.H., E.W.S.M.
1—LONDONIZING (SPONGING) MACH., P&W., 80", S.S. Steam Box, Blower.
1—MIXER, Lightnin, Mod. C4, ½" S.S. shaft, 2½" Propeller, ¼ Hp. M.
2—NAPPERS, Woonsocket, D.A., 60", 36 Roll, B.B. Workers, Folder.
3—NAPPERS, D&F., 72", 80", 24 Roll, Folders, M.D.
1—NAPPER, Gessner, S.A., 80", 20 V-Belt Driven Rolls, Folder.
1—KNITGOODS NAPPER, D&F., 80", with 20 Gear Driven Rolls, Turning Arms.
1—SHEAR, Sistig, Flat Blade, 64" file cut Revolver, Wire Tiger Roll.
1—TENTER FRAME, V. Vlaan., Clip Type, B.B. 66" x 40', Elec. Guiders, M.D.
1—TENSILE TESTER, Dillon, 100# cap., 1" clamps, 18" Elong. Scale, M.D.
1—TENSILE TESTER, Scott, Serigraph, Mod. IP2, 1000 gram. cap.
3—TENSILE TESTERS, Cloth, Yarn, 100-150# cap., Vert. Mod., Hand Oper.

McDOWELL ASSOCIATES, INC.

General Offices 51-E 42 Street
New York City 17, N. Y.
Phone: Murray Hill 2-7417

Warehouse No. 1 N. Front
Dock & Water Sts., Hudson, N. Y.
Phone: Hudson 8-3211

CIRCLE 405 ON READER SERVICE CARD

WE OFFER FOR SALE . . .

2—WHITIN MODEL E SPINNING FRAMES—5" R—6½" G.

2—Portable Lift Trucks
12—C&K 60" looms, model C2, multipliers, leno motions, 25 harness
20—D & B 40" Cotton Cards
1—Foster #102 winder, 100 spindles, 50 for paper cones and 50 for tubes
32—C&K 56" S.3 looms, M.D., W/Dobby
1—P & W 3-blade Shear Complete
1—Barber Colman 56" LL Knotter
1—Knowles, 1953, Drum Type H.S. Dresser W/Creel, 96"
1—Roy Napper Grinder 100"
1—P & W 72" x 36" Semi Decater, 1947
1—Sargent Bagging Machine
8—Waste End Blowers—110v.
2—Collins Fancy Twisters, 200 spdls.
15—Spindles Whitin Schweiter Winder
2—Scutchers 72" and 78" complete
Nash Pumps sizes, 1-2-3-4-5-6
4—Whitin "B" Fancy Twisters, 4" gauge, 200 spindles, M.D.
2—Tolhurst 60" S.S. Extractors.
1—Gessner Vacuum Extractor, Folder, 76", Adjustable, M.D.
1—Terrell Bobbin stripper, M.D.
1—HERMAS 4 Blade Vertical Shear complete with Flock System, motors, blower, rolling device, 1948
1—D & F Fearnaught Picker with feed
2—Cloth Numbering Machines
1—Peralta 48", rebuilt
1—H & W yarn conditioning oven
2—Hunter Fulling Mills 26E
1—Toledo Cloth weighing scale
2—G.E. Motors, A.C.A. 5-15 H.P.
10—Klauder Weiden S.S. skein dye, 12 stick—15 stick—and 36 stick units
1—Smith Drum 100 arm S.S. skein dye
1—Franklin 95 LB. S.S. package dye
2—Sample Dryers
8—Hussong S.S. stock & skein dye
1—American Laundry Washer
1—Hurricane Dryer and Can dryers Stainless steel tanks all sizes

Write, Wire or Phone Today—CABLE ADTEX

ATCO

ADVANCED TEXTILE COMPANY

P. O. Box 661 • STuart 1-3633 • Providence, R. I.

CIRCLE 406 ON READER SERVICE CARD

MACHINERY

1—S.L. Gwaltney Spin Frame SG-4, 1956
2—Whitin F2 L.D. Spin Frames, 1949
1—S.L. Spin Frame SS-4, 1950
2—S.L. Rov. Frames FS-4, 10x5, 1950
2—Whitin S.D. Rov. Frames 8x4, 1947
2—Atwood 110 Uptwisters, 1948
1—H&W Yarn Conditioner ST2-86x44x96
1—Cocker 820 End All Purpose Creel
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1—Johnson 7 Can Slasher 30 x 60 SS
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1—Universal #45 Winder-5 spindles
2—Universal #50 Coners-rebuilt-gear
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ACCESSORIES

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100M—Woolen Loom Bobbins 8⅝-3 ring
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16—W-2 C&K Automatic 82 Woolen Looms
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4—C&K—92" 4 x 4 Box Looms
50—82" Loom Beams—75—Loom Beams 92"—for C&K W-3 Looms
35,000—Loom Bobbins Automatic 8¾"
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1—Each Parks & Woolson Model A 2 Blade Shears 66" and 80"
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SS dye becks 8'-15'
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Woolen-Worsted
LOOMS
90" reed space.
Motor not required.
Must be in good condition.
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Woolen Spinning Frames 4" ring
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MODERN DYEING • FINISHING • PRINTING MACHINERY

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1—65" Palmer Unit, blanket.
28—50", 60", 70" Dye Jiggs, enclosed and open, stainless steel.
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2—12' Enclosed Stainless Steel Dye Becks, 45" deep.
1—4 Color 64" Print Machine.
1—60" 3 Roll Finishing Calender.
4—Sample Dye Becks, 42"-60" depths, stainless steel.
23—66" x 30" Stainless Steel Dry Cans, 35 lb. pressure.
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8—72" New S.S. Dry Cans.
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4—60" Morrison Dye Jiggs, stainless.
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58—Whitin 40" Cards, 27" Doffers 12" Coilers.
4—Saco-Lowell 10x5 Slubbers, 108 spindles each with FS4 Long Draft.
1—Abbott #65 Cone Winder, 108 Spindles.

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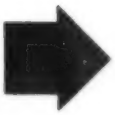

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21 GOODYEAR—CHEMICAL DIV... 21

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77 HAGAN CHEMICALS & CONTROLS, INC. 77

Corrosion Control—Write for Bulletin 410-12-7 for complete description of Hagafilm.

156 JOHNSON CORP., THE 156

Rotary Pressure Joints — Write for Catalog S-3002.

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258 M-B PRODUCTS 144

Pneumatic Roll Picker—For complete information on Model 59 write for literature.

259 MOUNT HOPE MACHINERY CO. 147

Cloth Opening Equipment—To get the facts write for Folder "Be Kind to Cloth—and Profits".

138 NATIONAL VULCANIZED FIBRE CO. 138

Receptacles — For light weight Kennett Receptacles to fit any textile processing requirement write for line folder to Dept. BB 4.

43 NORGREN CO., C. A. 43

Air-Line Filters—Write for descriptive literature for further information and the money-saving features.

15 SMITH CORP., A. O. 15

Permaglas Units—Write for free Permaglas Mechanized Storage Unit Bulletin MU-100.

82 STOWE-WOODWARD CO. 82

Slasher Rolls—Write for "Sealskin" Bulletin for further description and information.

123 SUPREME KNITTING MACHINE CO., INC. 123

Knitting Machine—For New Supreme IRW/2 model write for Booklet on important advance in the interlock field.

16 TEXAS INSTRUMENTS INCORPORATED, METALS & CONTROLS DIV. 16

Motor Protectors—To Eliminate Motor Burnouts write for Bulletin PR1243 which gives the complete story.

142, 143 WOOD'S SONS CO., T. B. 142, 143

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Card Drive—write for Bulletin 6100.

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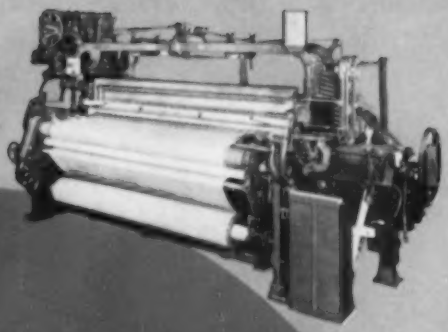

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N

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